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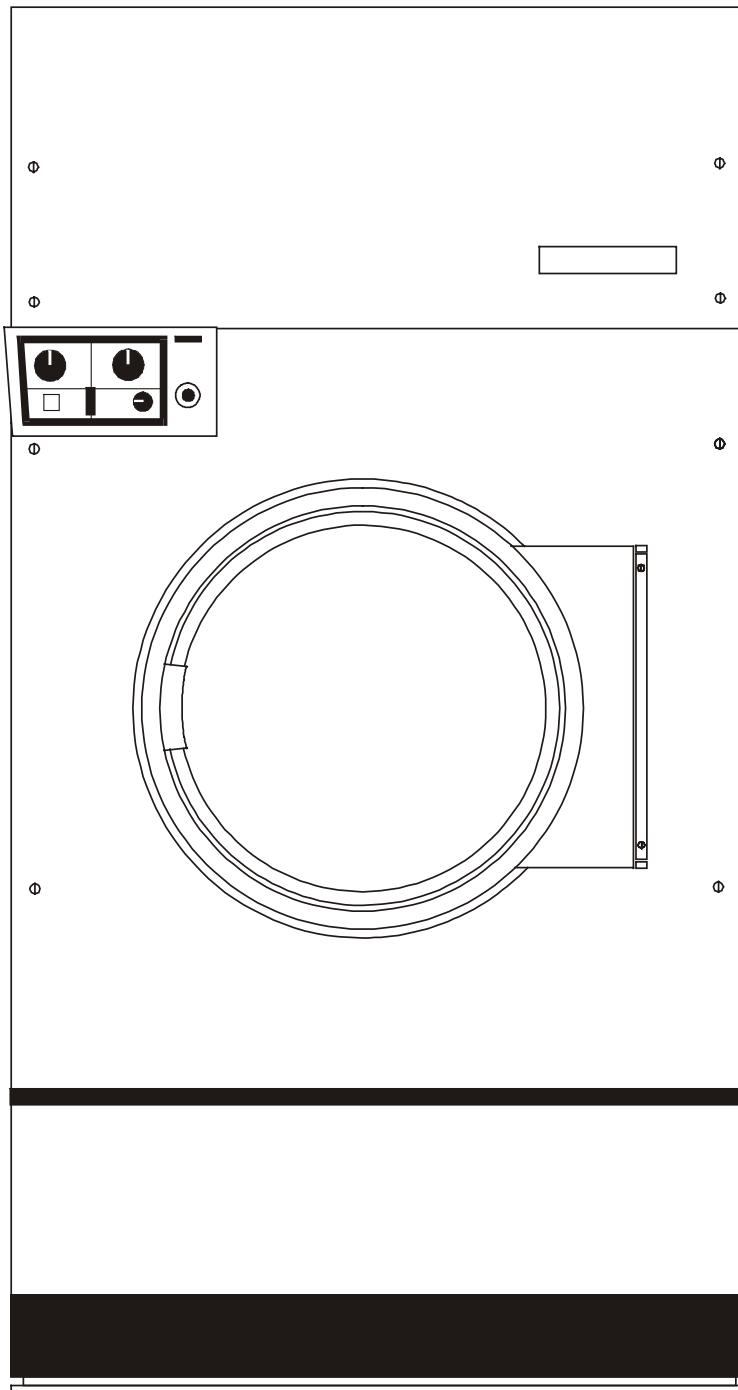
SERVICE MANUAL**PUBLICATION DATE: 10/03****70276101****INDUSTRIAL DRYERS**

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AT, HT, PT, ST, UT, WT and XT Micro Control

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Section 1

Safety Information

Throughout this manual and on machine decals, you will find precautionary statements (“CAUTION”, “WARNING”, and “DANGER”) followed by specific instructions. These precautions are intended for the personal safety of the operator, user, servicer, and those maintaining the machine.

	DANGER
<p>DANGER indicates the presence of a hazard that will cause severe personal injury, death, or substantial property damage if the danger is ignored.</p>	

	WARNING
<p>WARNING indicates the presence of a hazard that can cause severe personal injury, death, or substantial property damage if the warning is ignored.</p>	

	CAUTION
<p>CAUTION indicates the presence of a hazard that will or can cause minor personal injury or property damage if the caution is ignored.</p>	

Additional precautionary statements (“IMPORTANT” and “NOTE”) are followed by specific instructions.

IMPORTANT: The word “IMPORTANT” is used to inform the reader of specific procedures where minor machine damage will occur if the procedure is not followed.

NOTE: The word “NOTE” is used to communicate installation, operation, maintenance or servicing information that is important but not hazard related.

In the interest of safety, some general precautions relating to the operation of this machine follow.

	WARNING
<ul style="list-style-type: none">• Failure to install, maintain and/or operate this product according to the manufacturer's instructions may result in conditions which can produce serious injury, death and/or property damage.• Do not repair or replace any part of the product or attempt any servicing unless specifically recommended or published in this Service Manual and unless you understand and have the skills to carry out the servicing.• Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the product is properly grounded and to reduce the risk of fire, electric shock, serious injury or death.	

W006R2

Section 1 Safety Information

IMPORTANT INFORMATION: During the lifetime of a tumbler, it may require service. The information contained in this manual was written and is intended for use by qualified service technicians who are familiar with the safety procedures required in the repair of a tumbler, and who are equipped with the proper tools and testing equipment.



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W240



WARNING

Repairs that are made to your products by unqualified persons can result in hazards due to improper assembly or adjustments subjecting you or the inexperienced person making such repairs to the risk of serious injury, electrical shock or death.

W007



CAUTION

If you or an unqualified person perform service on your product, you must assume the responsibility for any personal injury or property damage which may result. The manufacturer will not be responsible for any injury or property damage arising from improper service and/or service procedures.

W008

NOTE: The WARNING and IMPORTANT instructions appearing in this manual are not meant to cover all possible conditions and situations that may occur. It must be understood that common sense, caution and carefulness are factors which CANNOT be built into this tumbler. These factors MUST BE supplied by the person(s) installing, maintaining or operating the tumbler.

Always contact your dealer, distributor, service agent or the manufacturer on any problems or conditions you do not understand.

Locating An Authorized Service Person

Alliance Laundry Systems is not responsible for personal injury or property damage resulting from improper service. Review all service information before beginning repairs.

Warranty service must be performed by an authorized technician, using authorized factory parts. If service is required after the warranty expires, Alliance Laundry Systems also recommends contacting an authorized technician and using authorized factory parts.

Section 2

Introduction

Model Identification

Information in this manual is applicable to these models:

Gas	Steam
AT170L	SA170N
AT170N	ST170L
HA170L	ST170N
HA170N	SU170L
HT170L	SU170N
HT170N	UA170L
HU170L	UA170N
HU170N	UT170L
PA170L	UT170N
PA170N	UU170L
PT170L	UU170N
PT170N	WT170L
PU170L	WT170N
PU170N	XT170L
SA170L	XT170N
	XU170N

Includes models with the following control suffixes (7th and 8th characters):

RM – reversing OPL micro

RT – reversing manual timer

Section 2 Introduction

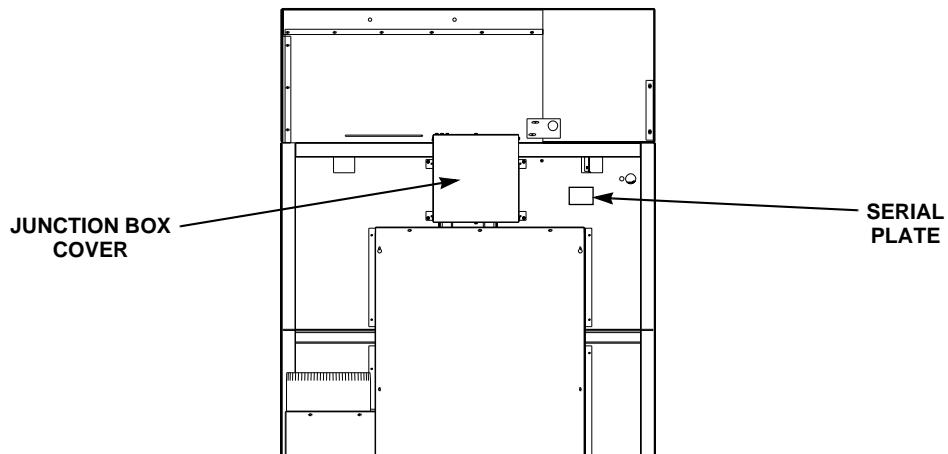
Customer Service

If literature or replacement parts are required, contact the source from whom the machine was purchased or contact Alliance Laundry Systems at (920) 748-3950 for the name and address of the nearest authorized parts distributor.

For technical assistance, call (920) 748-3121.

Serial Plate Location

When calling or writing about your product, be sure to mention model and serial numbers. Model and serial numbers are located on serial plate as shown.



TMB1765S

Safety Warnings and Decals

SAFETY WARNINGS and decals have been provided in key locations to remind you of important precautions for the safe operation and maintenance of your tumbler. Please take the time to review these warnings before proceeding with service work.

All decals have been designed and applied to withstand washing and cleaning. Decals should be checked periodically to be sure they have not been damaged, removed, or painted. Refer to *Parts Manual* for ordering replacement decals.

Safety Precautions for Servicing Tumblers

- **Disconnect electrical service.**
- **Shut off supply gas valve before servicing gas components.**
- **Access panel MUST be reinstalled after inspection or servicing of tumbler is completed.**
- **Use a non-corrosive leak detecting compound to check all pipe connections for gas leaks. DO NOT USE AN OPEN FLAME TO CHECK FOR GAS LEAKS!**
- **Belt guard MUST be reinstalled after inspection or servicing of tumbler is completed.**
- **Contactor box cover MUST be reinstalled after inspection or servicing of electric and/or reversing tumbler is completed.**
- **Loading door switch MUST be operational before putting tumbler into service.**
- **Junction box cover MUST be reinstalled after inspection or servicing of tumbler is completed.**

Notes

Section 3

Troubleshooting



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

IMPORTANT: Refer to appropriate wiring diagram for aid in testing tumbler components.

1. MOTOR DOES NOT START

POSSIBLE CAUSE	TO CORRECT
Electrical power off, circuit breaker tripped or blown control fuse.	<ul style="list-style-type: none">• Check power supply, reset breaker, or replace fuses.
Inoperative transformer.	<ul style="list-style-type: none">• Replace transformer.
Loading door not closed or inoperative door switch.	<ul style="list-style-type: none">• Close door, or test switch and replace if inoperative.
Lint panel switch inoperative.	<ul style="list-style-type: none">• Replace or adjust lint panel switch.
Trunnion bearings binding.	<ul style="list-style-type: none">• Replace trunnion bearings.
Start circuit not completed.	<ul style="list-style-type: none">• Press start switch, or test switch and replace if inoperative.
Idler shaft binding.	<ul style="list-style-type: none">• Replace bearings.
Inoperative motor.	<ul style="list-style-type: none">• Have motor tested and replace if inoperative.
Inoperative relay.	<ul style="list-style-type: none">• Replace relay.
Timer improperly set.	<ul style="list-style-type: none">• Turn drying timer clockwise to desired setting.
Inoperative timer.	<ul style="list-style-type: none">• Test timer and replace if inoperative.
Broken, loose or incorrect wiring.	<ul style="list-style-type: none">• Refer to wiring diagram located on back of tumbler or in literature packet.

	WARNING
To reduce the risk of electric shock, fire, explosion, serious injury or death:	
<ul style="list-style-type: none"> • Disconnect electric power to the tumbler before servicing. • Close gas shut-off valve to gas tumbler before servicing. • Close steam valve to steam tumbler before servicing. • Never start the tumbler with any guards/panels removed. • Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded. 	

W002

2. MOTOR OVERLOAD PROTECTOR CYCLES REPEATEDLY

POSSIBLE CAUSE	TO CORRECT
Incorrect voltage.	<ul style="list-style-type: none"> • Refer to the <i>Installation Manual</i> for electrical requirements.
Clothes load too large.	<ul style="list-style-type: none"> • Remove part of load.
Clothes cylinder is binding.	<ul style="list-style-type: none"> • Check cylinder for binding. Refer to <i>Adjustment</i> Section in this manual for cylinder adjustment.
Inadequate wiring.	<ul style="list-style-type: none"> • Electrician should verify that wiring and voltage is adequate.
Inadequate make-up air.	<ul style="list-style-type: none"> • Refer to <i>Installation Manual</i> for make-up air requirements.
Poor maintenance.	<ul style="list-style-type: none"> • Clean lint accumulation on and around the motor.
Broken, loose or incorrect wiring.	<ul style="list-style-type: none"> • Refer to wiring diagram located on back of tumbler or in literature packet.

3. MOTOR RUNS BUT CYLINDER DOES NOT TURN

POSSIBLE CAUSE	TO CORRECT
Motor drive pulley loose.	<ul style="list-style-type: none"> • Tighten drive pulley bushing screws.
Broken or loose cylinder belt.	<ul style="list-style-type: none"> • Replace or adjust belts.
Broken or loose drive belt.	<ul style="list-style-type: none"> • Replace or adjust belt.
Cylinder is binding.	<ul style="list-style-type: none"> • Check cylinder for binding. Refer to <i>Adjustment</i> Section in this manual for proper cylinder adjustment.

4. MOTOR DOES NOT STOP

POSSIBLE CAUSE	TO CORRECT
Inoperative door switch.	<ul style="list-style-type: none"> • Test switch and replace if inoperative.
Inoperative timer.	<ul style="list-style-type: none"> • Test timer and replace if inoperative.
Incorrect wiring.	<ul style="list-style-type: none"> • Refer to wiring diagram located on back of tumbler or in literature packet.
Inoperative motor contactor.	<ul style="list-style-type: none"> • Test contactor and replace if inoperative.

**WARNING**

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

5. GAS BURNER DOES NOT IGNITE - GAS MODELS

POSSIBLE CAUSE	TO CORRECT
Improper or inadequate exhaust system.	<ul style="list-style-type: none"> • Refer to the <i>Installation Manual</i> for exhaust system requirements.
Drying timer not selected or inoperative.	<ul style="list-style-type: none"> • Set drying timer or replace if inoperative.
Inoperative thermostats.	<ul style="list-style-type: none"> • Test thermostats and replace if inoperative.
Insufficient gas supply.	<ul style="list-style-type: none"> • Open partially closed gas shut-off valve, or correct low gas pressure. Check manifold pressure and adjust to pressure specified on rating place. If pressure cannot be obtained, have gas supplier check main pressure.
Incorrect orifices.	<ul style="list-style-type: none"> • Tumbler is equipped for type of gas specified on serial plate. If orifices are different from that specified on serial plate, obtain and install proper orifices.
Inoperative igniter.	<ul style="list-style-type: none"> • Test igniter and replace if inoperative.
Inoperative igniter control.	<ul style="list-style-type: none"> • Test igniter control and replace if inoperative.
Inoperative gas valve coils.	<ul style="list-style-type: none"> • Test coils and replace if inoperative.
Lint buildup.	<ul style="list-style-type: none"> • Clean lint compartment after every eight hour shift. Check damper for lint accumulation. Check ductwork for lint build-up.
Inadequate ductwork and make-up air.	<ul style="list-style-type: none"> • Refer to <i>Installation Manual</i> to ensure that ductwork and make-up air openings are sized properly.
Inoperative airflow switch.	<ul style="list-style-type: none"> • Test switch and replace if inoperative.
Lint door panel not closed properly.	<ul style="list-style-type: none"> • Open lint door panel, place lint door and panel back on tumbler (ensuring a tight fit).
Broken, loose or incorrect wiring.	<ul style="list-style-type: none"> • Refer to wiring diagram located on back of tumbler or in literature packet.
Improper fan rotation.	<ul style="list-style-type: none"> • May be due to improper wiring resulting in low airflow. Refer to <i>Installation Manual</i>.

**WARNING**

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

6. BURNER IGNITES AND GOES OUT REPEATEDLY - GAS MODELS

POSSIBLE CAUSE	TO CORRECT
Insufficient gas pressure.	<ul style="list-style-type: none"> • Check gas supply and pressure. A low flame will not maintain sensor conductivity.
Burner ports plugged.	<ul style="list-style-type: none"> • Check burner tubes for build-up.
Improper or inadequate exhaust system or make-up air	<ul style="list-style-type: none"> • Refer to <i>Installation Manual</i> for exhaust and make-up air requirements.
Inoperative high limit or cabinet limit thermostat.	<ul style="list-style-type: none"> • Test thermostat and replace if inoperative.
Improper orifices.	<ul style="list-style-type: none"> • Tumbler is equipped for type of gas specified on serial plate. If orifices are different from that specified on serial plate, obtain and install proper orifices.

7. BURNER SHUTS-OFF PREMATURELY - GAS MODELS

POSSIBLE CAUSE	TO CORRECT
Improper or inadequate exhaust and/or make-up air system.	<ul style="list-style-type: none"> • Refer to <i>Installation Manual</i> for exhaust and make-up air requirements.
Insufficient gas supply.	<ul style="list-style-type: none"> • Open partially closed gas shut-off valve, or correct low pressure.
Tumbler not properly equipped for type of gas used or altitude.	<ul style="list-style-type: none"> • Tumbler is equipped for type of gas specified on serial plate. If not properly equipped for gas type and altitude, obtain and install correct components.
Improperly adjusted burner flame.	<ul style="list-style-type: none"> • Refer to <i>Adjustment</i> Section in this manual for burner flame adjustment.
Cycling off on high limit thermostat.	<ul style="list-style-type: none"> • Refer to <i>Paragraph 8</i>.
Broken, loose or incorrect wiring.	<ul style="list-style-type: none"> • Refer to wiring diagram located on back of tumbler or in literature packet.
Improper fan rotation.	<ul style="list-style-type: none"> • May be due to improper wiring resulting in low airflow. Refer to <i>Installation Manual</i>.
Inoperative gas valve coils.	<ul style="list-style-type: none"> • Test coils and replace if inoperative.

**WARNING**

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

8. BURNER REPEATEDLY CYCLES OFF ON HIGH LIMIT THERMOSTAT - GAS MODELS

POSSIBLE CAUSE	TO CORRECT
External exhaust system is longer than recommended or inadequate make-up air.	<ul style="list-style-type: none"> • Refer to <i>Installation Manual</i> for exhaust and make-up air requirements.
Clogged lint screen.	<ul style="list-style-type: none"> • Remove screen and clean. Lint screen and compartment should be cleaned after every eight hour shift.
Lint in internal tumbler ductwork.	<ul style="list-style-type: none"> • Disassemble tumbler ductwork and clean.
Lint in external exhaust system.	<ul style="list-style-type: none"> • Disassemble exhaust system and clean.
High limit thermostat cycling at too low a temperature.	<ul style="list-style-type: none"> • Replace thermostat.
Lint door panel not closed properly.	<ul style="list-style-type: none"> • Remove lint door panel - place lint door panel back on tumbler (ensuring a tight fit).

9. STEAM VALVE OR GAS BURNER DOES NOT SHUT-OFF

POSSIBLE CAUSE	TO CORRECT
Impurities on gas valve or steam valve seat, preventing valve from closing.	<ul style="list-style-type: none"> • Disassemble and clean steam valve or replace steam valve.
Inoperative drying timer or control relay.	<ul style="list-style-type: none"> • Replace timer or control relay.
Incorrect wiring.	<ul style="list-style-type: none"> • Refer to wiring diagram located on back of tumbler or in literature packet.

10. CLOTHES DO NOT DRY

POSSIBLE CAUSE	TO CORRECT
Heat source inoperative.	<ul style="list-style-type: none"> • Refer to <i>Paragraph 17</i>.
Too much water in articles being dried.	<ul style="list-style-type: none"> • Remove excess water.
Clothes load too large.	<ul style="list-style-type: none"> • Remove part of load. 170 pounds dry weight (AHAM cotton load) is a maximum load.
Improper or inadequate exhaust system.	<ul style="list-style-type: none"> • Refer to <i>Installation Manual</i> for exhaust requirements.
Heat source shuts-off prematurely.	<ul style="list-style-type: none"> • Refer to <i>Paragraph 16</i>.
Drying timer improperly set.	<ul style="list-style-type: none"> • Set selector for higher setting.
Incorrect voltage.	<ul style="list-style-type: none"> • Refer to <i>Installation Manual</i> for electrical requirements.
Inadequate make-up air.	<ul style="list-style-type: none"> • Refer to <i>Installation Manual</i> for make-up air requirements.
Improper fan rotation.	<ul style="list-style-type: none"> • May be due to improper wiring resulting in low airflow. Refer to <i>Installation Manual</i>.

Section 3 Troubleshooting

	WARNING
	<p>To reduce the risk of electric shock, fire, explosion, serious injury or death:</p> <ul style="list-style-type: none">• Disconnect electric power to the tumbler before servicing.• Close gas shut-off valve to gas tumbler before servicing.• Close steam valve to steam tumbler before servicing.• Never start the tumbler with any guards/panels removed.• Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

11. TUMBLER OVERHEATING

POSSIBLE CAUSE	TO CORRECT
Gas Models: Incorrect main burner orifices.	<ul style="list-style-type: none">• Replace orifices.
Gas Models: Gas pressure too high.	<ul style="list-style-type: none">• Adjust gas pressure as specified on serial plate.
Steam Models: Steam solenoid valve stuck open.	<ul style="list-style-type: none">• Clean solenoid valve and replace if necessary.
Inadequate make-up air.	<ul style="list-style-type: none">• Refer to Installation Manual for make-up air requirements.
Lint accumulation.	<ul style="list-style-type: none">• Remove lint.
Restricted or inadequate exhaust system.	<ul style="list-style-type: none">• Remove obstruction or lint build-up from exhaust ductwork. Refer to the Installation Manual for exhaust system requirements.
Inoperative thermostat.	<ul style="list-style-type: none">• Replace thermostat.

12. BURNERS NOT BURNING PROPERLY - GAS MODELS

POSSIBLE CAUSE	TO CORRECT
Burner air shutters incorrectly adjusted.	<ul style="list-style-type: none">• Refer to Adjustment Section in this manual for proper flame adjustment.
Foreign material in burners.	<ul style="list-style-type: none">• Disassemble burners and remove obstruction.
Gas pressure too high.	<ul style="list-style-type: none">• Check serial plate on back of the tumbler for correct gas pressure.
Incorrect orifices.	<ul style="list-style-type: none">• Tumbler is equipped for type of gas specified on serial plate. If orifices are different from that specified on serial plate, obtain and install proper orifices.
Restricted or blocked exhaust duct.	<ul style="list-style-type: none">• Disassemble and clean exhaust system.
Airflow switch not functioning properly.	<ul style="list-style-type: none">• Check adjustment and replace airflow switch if necessary.
Improper fan rotation.	<ul style="list-style-type: none">• May be due to improper wiring resulting in low airflow. Refer to Installation Manual.

13. LOADING DOOR OPENS DURING OPERATION

POSSIBLE CAUSE	TO CORRECT
Door strike improperly adjusted.	<ul style="list-style-type: none">• Refer to Adjustment Section in this manual for door strike adjustment.
Tumbler improperly leveled.	<ul style="list-style-type: none">• Refer to Adjustment Section in this manual for leveling adjustment.



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

14. TUMBLER RUNS BUT NO STEAM TO COILS - STEAM MODELS

POSSIBLE CAUSE	TO CORRECT
Shut-off valve closed.	<ul style="list-style-type: none"> • Check all valves in supply and return lines, make sure they are open.
Blocked steam trap.	<ul style="list-style-type: none"> • Remove trap and clean. Replace if inoperative.
Inoperative solenoid valve.	<ul style="list-style-type: none"> • Check operation of solenoid valve.
Incorrect installation of check valve.	<ul style="list-style-type: none"> • Check for inlet and outlet markings on check valve, and invert if necessary.
Clogged strainer.	<ul style="list-style-type: none"> • Remove strainer and clean.

15. WATER IN STEAM LINE - STEAM MODELS

POSSIBLE CAUSE	TO CORRECT
Incorrect installation of steam piping.	<ul style="list-style-type: none"> • Refer to <i>Installation Manual</i> for steam requirements.
Trap functioning improperly.	<ul style="list-style-type: none"> • Check trap for size and capacity. If trap is dirty or sluggish clean thoroughly or replace. Check return line for high back pressure. Check trap for proper installation. Refer to <i>Installation Manual</i> for requirements.



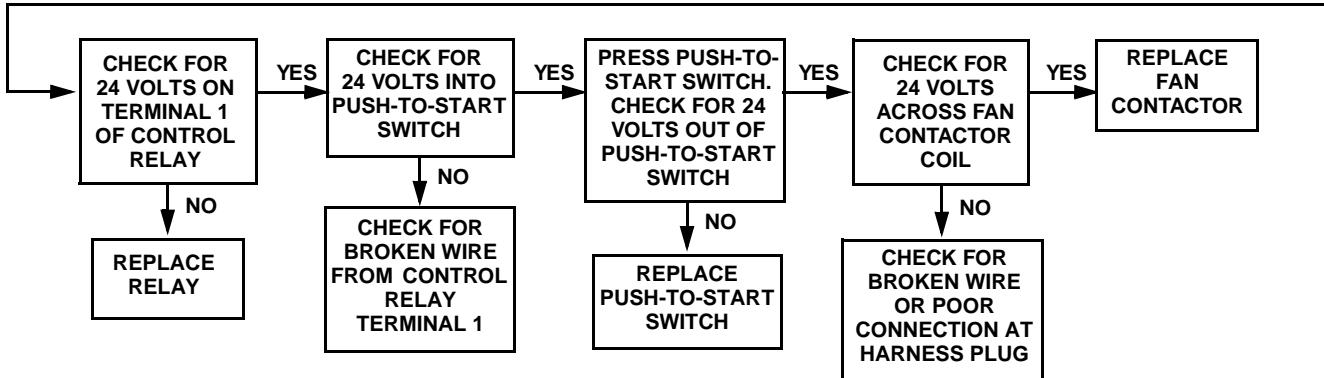
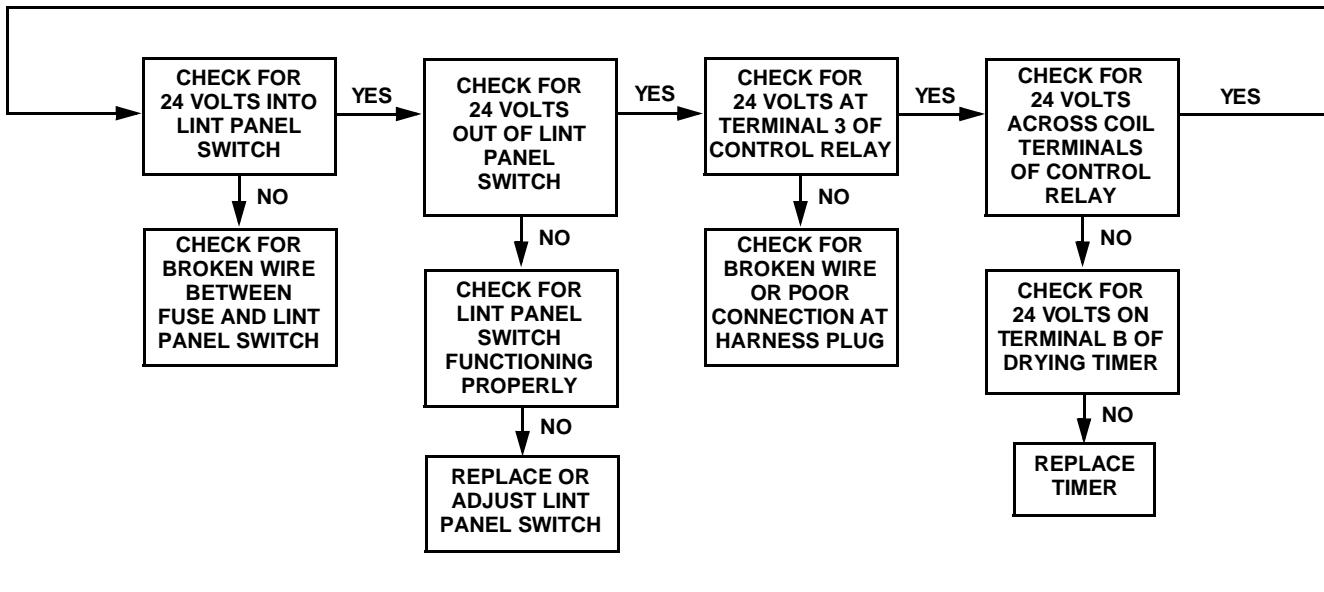
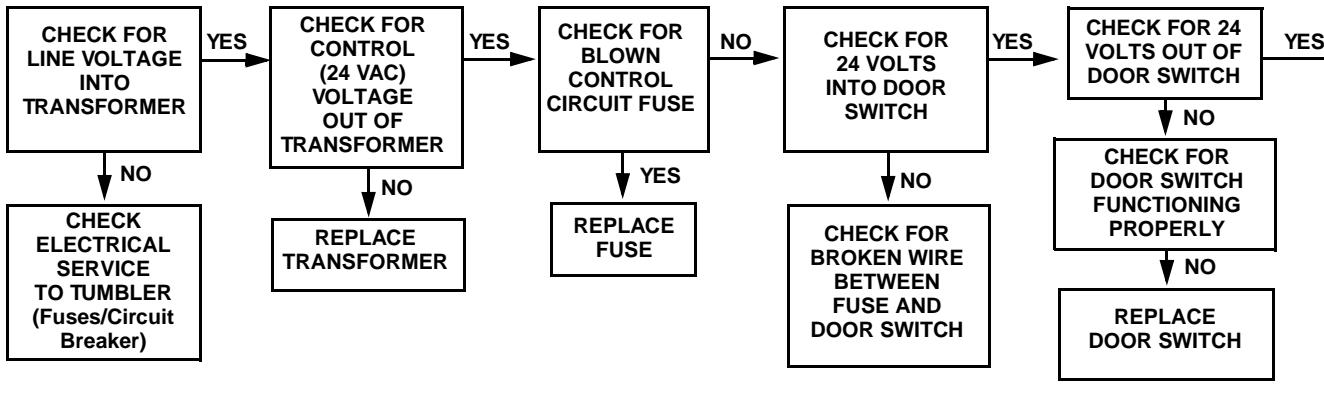
WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

16. TUMBLER WILL NOT START, TIME ON DRYING TIMER, DOOR CLOSED





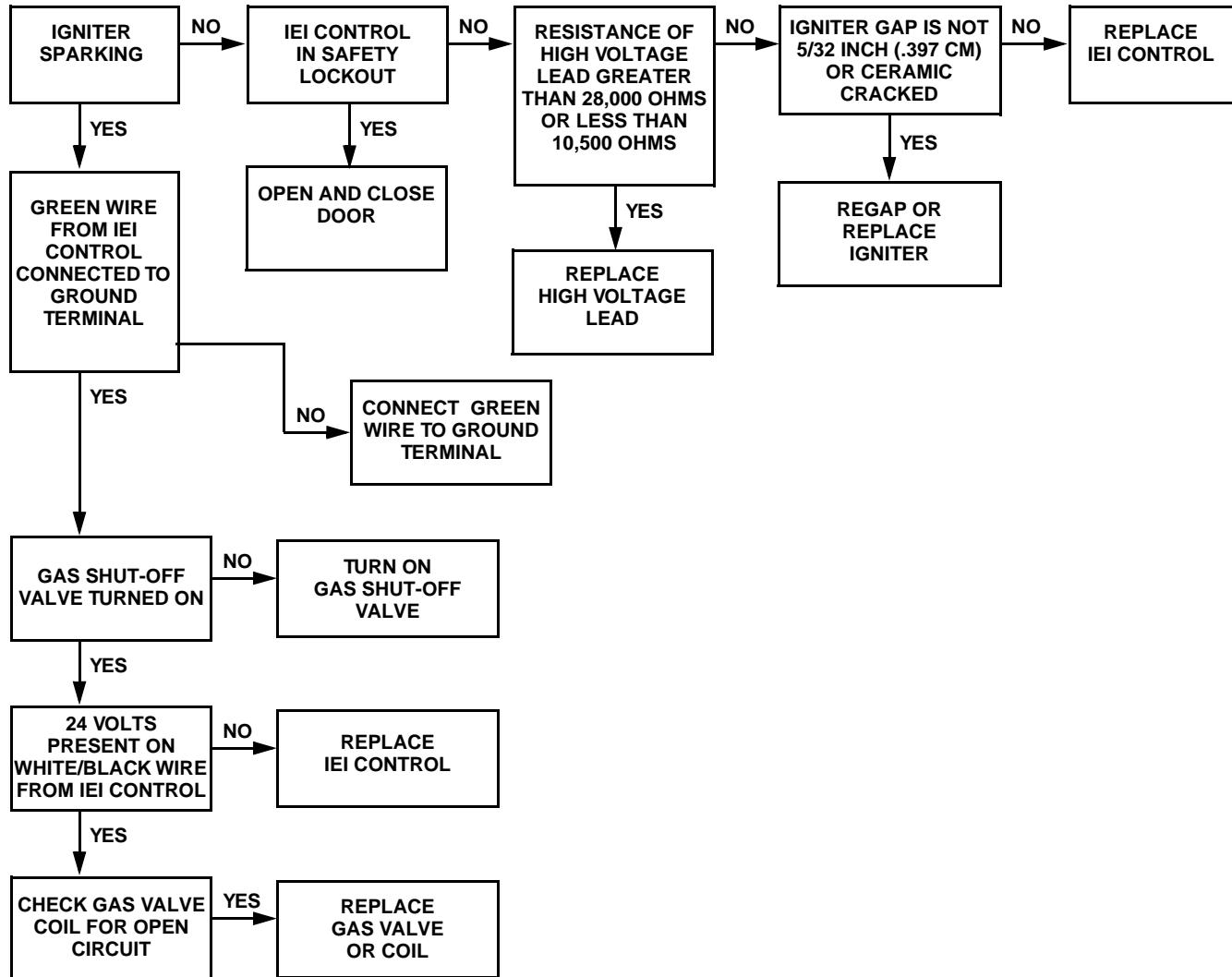
WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

17. MOTOR RUNS BUT NO HEAT

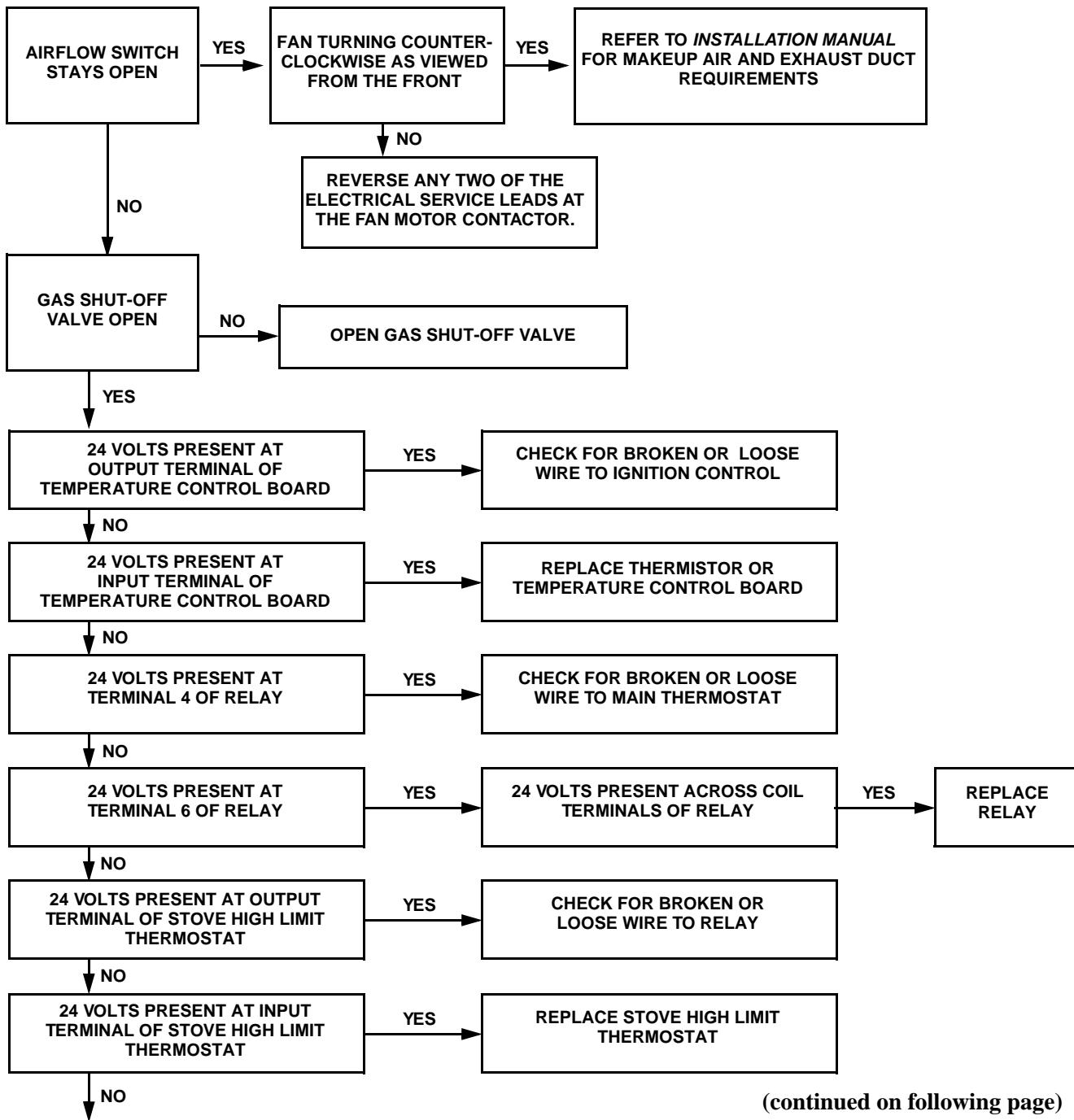


**WARNING**

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

18. CYLINDER TURNS, BUT WILL NOT HEAT

(continued on following page)



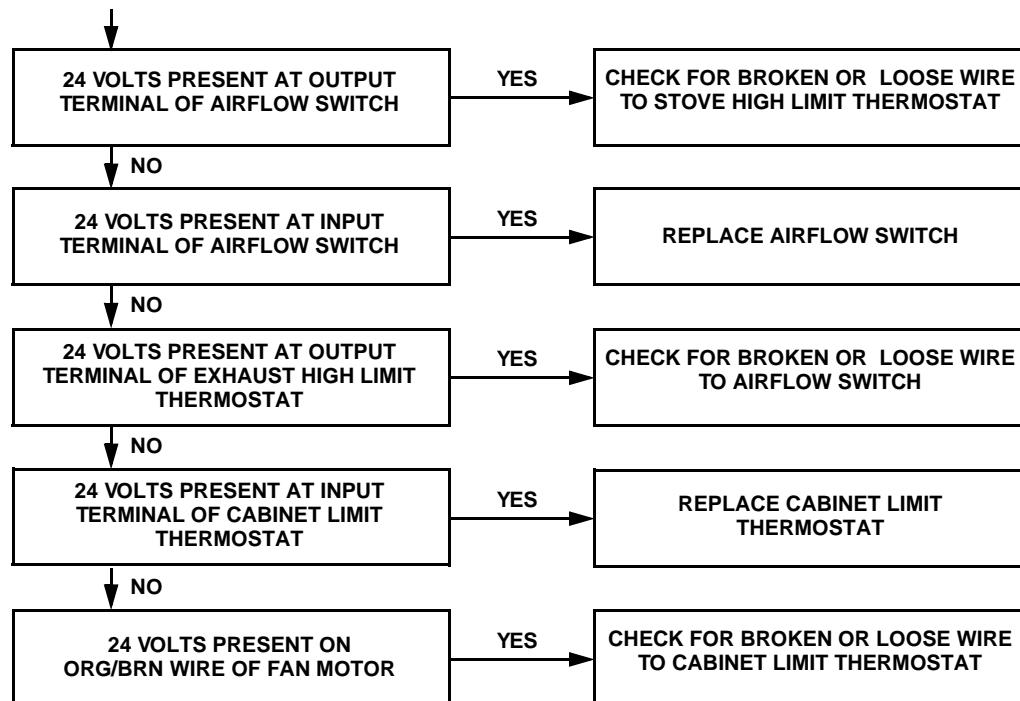
WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

18. CYLINDER TURNS, BUT WILL NOT HEAT (continued)



Section 3 Troubleshooting

Notes

Section 4

Grounding



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002



WARNING

To reduce the risk of fire and electric shock, check with a qualified serviceperson for proper grounding procedures. Improper connection of the equipment grounding conductor may result in a risk of electric shock.

W068R1



WARNING

To reduce the risk of fire and electric shock if electrical supply is coming from a three phase service:

- If there is a "High Leg" or "Stinger Leg" it should be connected to L3.

W446

19. GROUNDING INSTRUCTIONS

This drying tumbler must be grounded. In the event of malfunction or breakdown, grounding will reduce the risk of electric shock by providing the path of least resistance for electric current. This tumbler must be connected to a grounded metal, permanent wiring system; or an equipment grounding conductor must be run with the circuit conductors and connected to the appropriate ground location.

NOTE: To ensure protection against shock, this tumbler MUST be electrically grounded in accordance with local codes, or in the absence of local codes, with the latest edition of the National Electrical Code ANSI/NFPA No. 70. In Canada the electrical connections are to be made in accordance with CSA C22.1 or the latest edition of the Canadian Electrical Code, Part I and/or local codes. Electrical work should be done by a qualified electrician.



WARNING

All electrical connections should be made by a qualified electrician.

To reduce the risk of electrical shock, de-energize the electrical circuit being connected to the tumbler before making any electrical connections. Never attempt to connect a live circuit.

W070

Notes

Section 5

Service Procedures



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

20. ACCESS PANEL/INTERIOR CONTROL BOX

Refer to *Figure 1*.

- a. Remove four screws holding access panel to cabinet.
- b. Lift access panel off top edge of front panel and pull panel forward.
- c. Remove interior control box cover.

21. CONTROL FUSE HOLDER

Refer to *Figure 2*.

- a. Remove screws from interior control box cover.
- b. Lift access panel off top edge of front panel and pull panel forward. Refer to *Figure 1*.
- c. Remove control box cover.
- d. Disconnect fuse holder wires.

- e. Unscrew fuse holder nut from interior control box.
- f. Pull fuse holder out of control box.

22. CONTROL FUSE

Refer to *Figure 2*.

- a. Remove four screws from exterior control box cover and remove cover, disconnecting control box cover harness or load ready light wires.
- b. Remove screw from left and right sides of control mounting bracket securing control plate. Refer to *Figure 3*.
- c. Pivot plate forward to horizontal.
- d. Grasp fuse cover and rotate left until cover releases.
- e. Replace fuse.

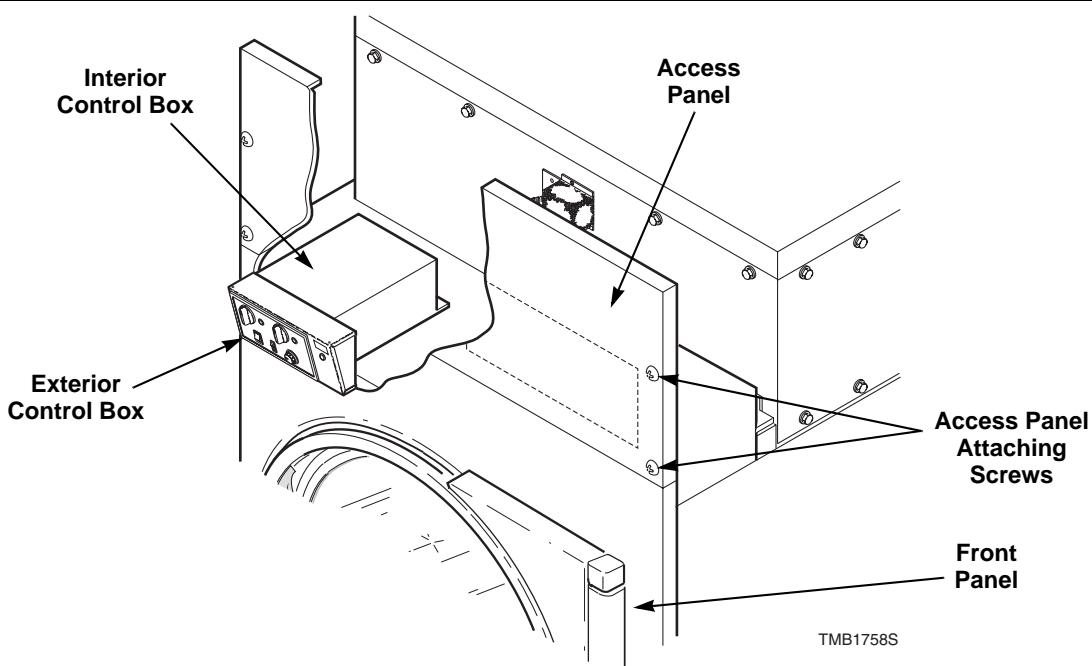


Figure 1



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

23. SIGNAL BUZZER

- a. Remove four screws holding access panel to cabinet. Refer to *Figure 1*.
- b. Lift access panel off top edge of front panel and pull panel forward. Refer to *Figure 1*.
- c. Remove interior control box cover. Refer to *Figure 2*.

- d. Locate buzzer on center wall of interior control box and disconnect wires to signal terminals.
- e. Rotate buzzer to remove from control box wall.

NOTE: Buzzer signal intensifies when turned clockwise.

NOTE: Refer to wiring diagram when rewiring signal.

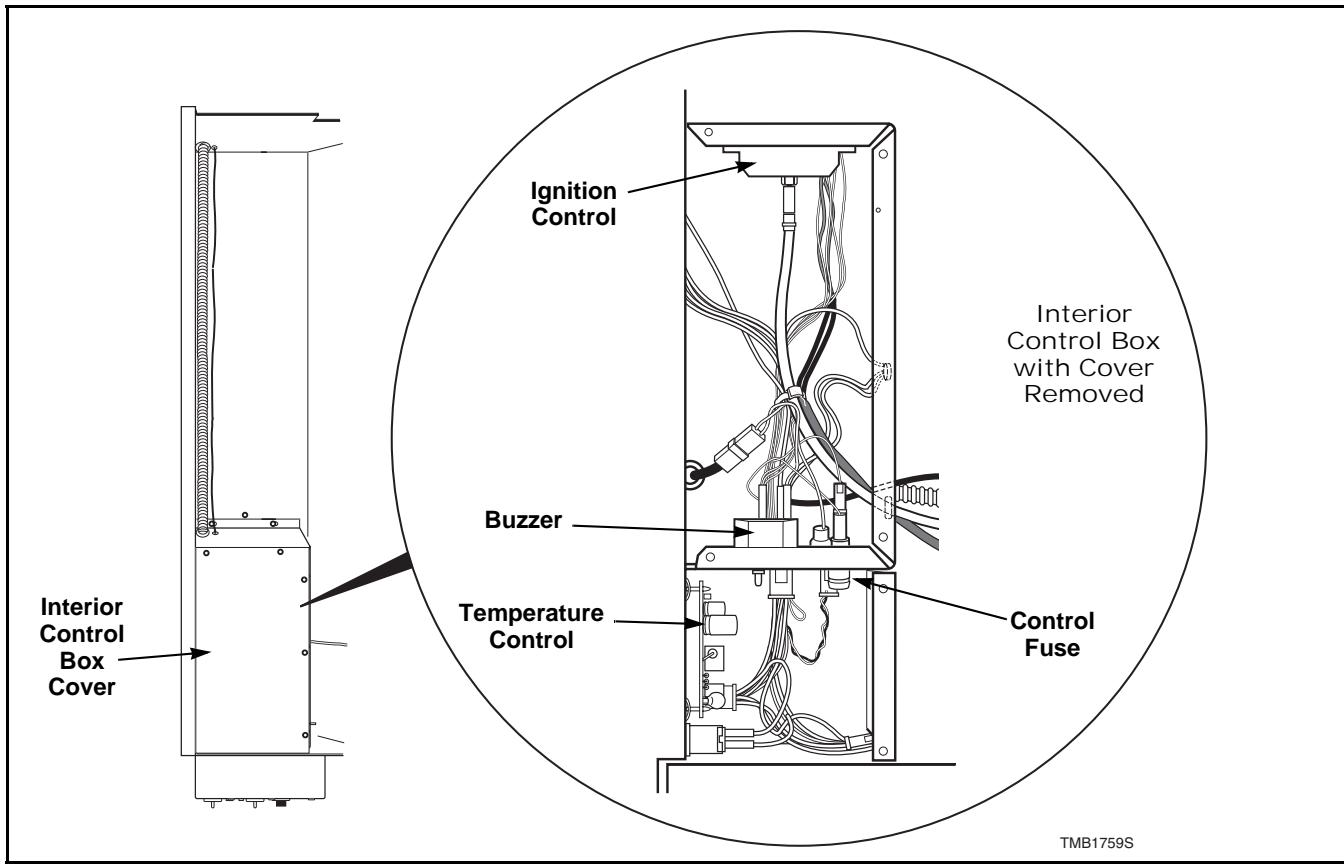


Figure 2



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

24. LOAD READY LIGHT

(Manual Timer Models)

Refer to *Figure 3*.

- a. Remove four screws from top and bottom surfaces of exterior control box cover.
- b. Pull cover forward. Disconnect wires from light terminals and remove light by depressing locking tabs.

NOTE: Refer to wiring diagram when rewiring light.

25. IGNITION RESET SWITCH

(European Gas Models Only)

Refer to *Figure 3*.

- a. Remove four screws from interior control box cover. Refer to *Figure 1*.
- b. Disconnect wires from ignition reset switch.
- c. Remove ignition reset switch.

NOTE: Refer to wiring diagram when rewiring switch.

26. EMERGENCY STOP SWITCH

(European Gas Models Only)

Refer to *Figure 3*.

- a. Remove four screws from interior control box cover. Refer to *Figure 1*.
- b. Remove emergency stop switch from contact block.

NOTE: Refer to wiring diagram when rewiring emergency stop switch.

27. PUSH-TO-START SWITCH

(Manual Timer Models)

- a. Remove screws from interior control box cover. Refer to *Figure 1*.
- b. Remove screws from exterior control box cover and remove cover. Refer to *Figure 1*.
- c. Remove two screws holding switch to timer graphic panel. Refer to *Figure 3*.
- d. Disconnect wires from switch terminals and remove switch.

NOTE: Refer to wiring diagram when rewiring switch.

28. COOL DOWN AND HEAT LIGHTS

(Manual Timer Models)

- a. Remove screws from interior control box cover. Refer to *Figure 1*.
- b. Disconnect light wire leads.
- c. Remove light through exterior control box. Refer to *Figure 1*.

NOTE: Refer to wiring diagram when rewiring lights.

Section 5 Service Procedures

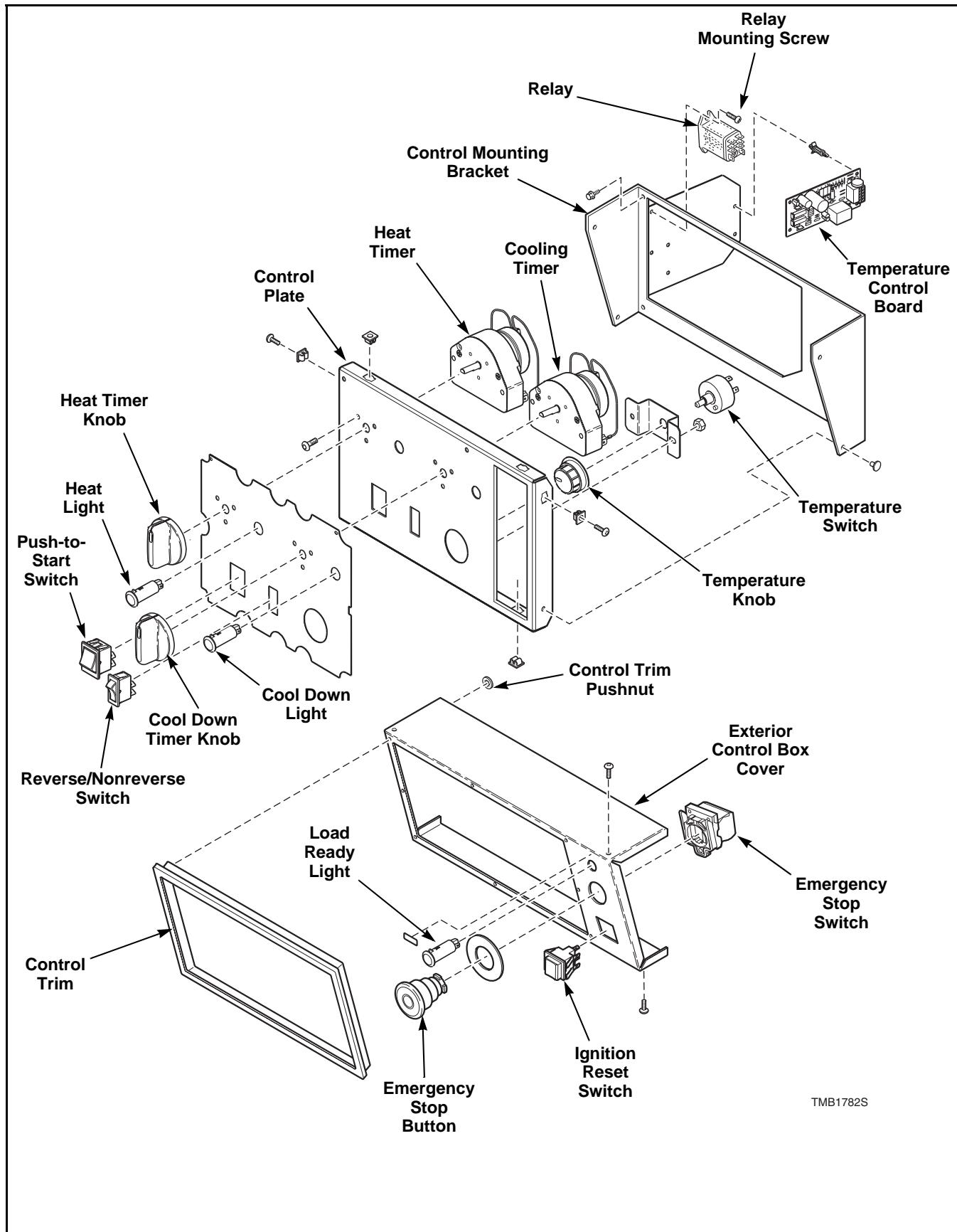


Figure 3



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

29. COOL DOWN AND HEAT TIMERS

(Manual Timer Models)

- a. Remove screws from interior control box cover. Refer to *Figure 1*.
- b. Pull timer knob off timer shaft. Refer to *Figure 3*.
- c. Remove screws from external control box and remove cover. Refer to *Figure 1*.
- d. Remove wires from timer terminals.
- e. Remove three screws holding timer to timer graphic panel.

NOTE: Refer to wiring diagram when rewiring timer.

30. RELAY

(Manual Timer Models)

- a. Remove screws from interior control box cover. Refer to *Figure 1*.
- b. Disconnect wires from relay.
- c. Remove two screws holding relay to interior control box. Refer to *Figure 3*.

NOTE: Refer to wiring diagram when rewiring relay.

31. REVERSING/NONREVERSING SWITCH

(Manual Timer Models)

Refer to *Figure 3*.

- a. Remove screws from interior control box cover. Refer to *Figure 1*.
- b. Disconnect the wires from the back of the switch.
- c. Depress tabs and pull switch out.

NOTE: Refer to wiring diagram when rewiring switch.

32. TEMPERATURE SWITCH

(Manual Timer Models)

- a. Remove four screws holding access panel to cabinet. Refer to *Figure 1*.
- b. Lift access panel off top edge of front panel and pull panel forward. Refer to *Figure 1*.
- c. Remove control box cover. Refer to *Figure 2*.
- d. Pull knob off switch. Refer to *Figure 3*.
- e. Disconnect wires from switch.
- f. Remove nuts holding switch to panel.

NOTE: Refer to wiring diagram when rewiring switch.



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

33. TEMPERATURE CONTROL BOARD

(Manual Timer Models)

Refer to *Figure 3*.

- a. Remove screws from interior control box cover and remove cover, disconnecting control box cover harness or load ready light wires.
- b. Remove screw from left and right sides of control bracket securing control plate.
- c. Pivot plate forward to horizontal.
- d. Disconnect two plugs from wall of interior control box and disconnect control box cover harness (European models only).
- e. Remove four screws securing control mounting bracket to front panel, careful to support control plate assembly.
- f. Pull entire control assembly away from unit.
- g. Disconnect wires from temperature control board.
- h. Depress four locking tabs securing control board to printed circuit board supports. Remove control.

NOTE: Refer to wiring diagram when rewiring temperature control.

IMPORTANT: Due to sensitivity of electronic control, careful handling is required. As a precautionary measure, we recommend using a grounded wrist strap when handling control. Wrist strap, cord and alligator clip are designed to carry away any electrostatic charge from your body and to direct charge to an available ground.

Handle control circuit board by the sides only. Do not contact circuit boards with hands or metal objects. Place control in a clean, dry area away from work area to avoid damage. Do not attempt field repair of the control. Attempted repair or tampering with the control will void its warranty.

34. ELECTRONIC CONTROL

Refer to *Figure 4*.

- a. Remove screws from interior control box cover.
- b. Pull cover forward. Disconnect control box cover harness (European models only).
- c. Remove screw from left and right sides of control bracket securing control plate.
- d. Pivot plate forward to horizontal.
- e. Disconnect wires from control.
- f. Remove four nuts securing control to control plate.

NOTE: Refer to wiring diagram when rewiring control.

IMPORTANT: Due to sensitivity of electronic control, careful handling is required. As a precautionary measure, we recommend using a grounded wrist strap when handling control. Wrist strap, cord and alligator clip are designed to carry away any electrostatic charge from your body and to direct charge to an available ground.

Handle control circuit board by the sides only. Do not contact circuit boards with hands or metal objects. Place control in a clean, dry area away from work area to avoid damage. Do not attempt field repair of the control. Attempted repair or tampering with the control will void its warranty.

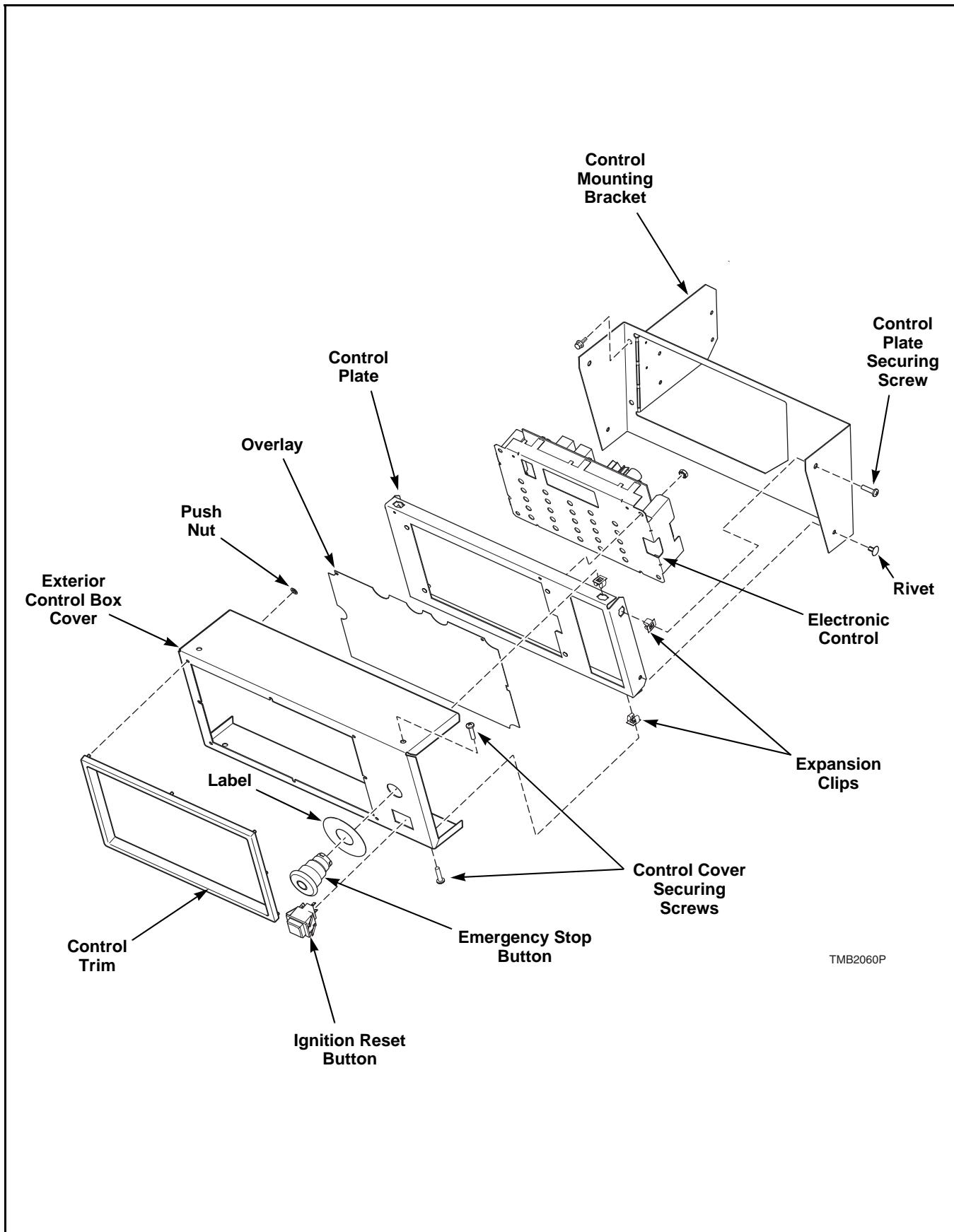


Figure 4



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

35. LOADING DOOR ASSEMBLY

Refer to *Figure 5*.

- a. Open loading door.
- b. While supporting door, remove upper or lower hinge pin holding door to hinge lug.
- c. Remove door.

NOTE: Nylon washer must be in place above lower hinge bracket when reinstalling loading door.

36. LOADING DOOR HANDLE

Refer to *Figure 5*.

- a. Open loading door.
- b. Remove screws holding door handle to door frame.

37. LOADING DOOR SWITCH

Refer to *Figure 5*.

- a. Open loading door.

- b. Remove two screws holding switch cover to front panel.

- c. Disconnect wires from door switch.

- d. Remove switch from cover by removing two nuts and screws.

NOTE: Switch must be flush to underside of cover at button protrusion and flats of hex nuts must be parallel to cover underside when reassembling.

NOTE: Refer to wiring diagram when rewiring switch.



WARNING

To reduce the risk of serious injury or death, loading door switch MUST be reinstalled after service is completed.

W328

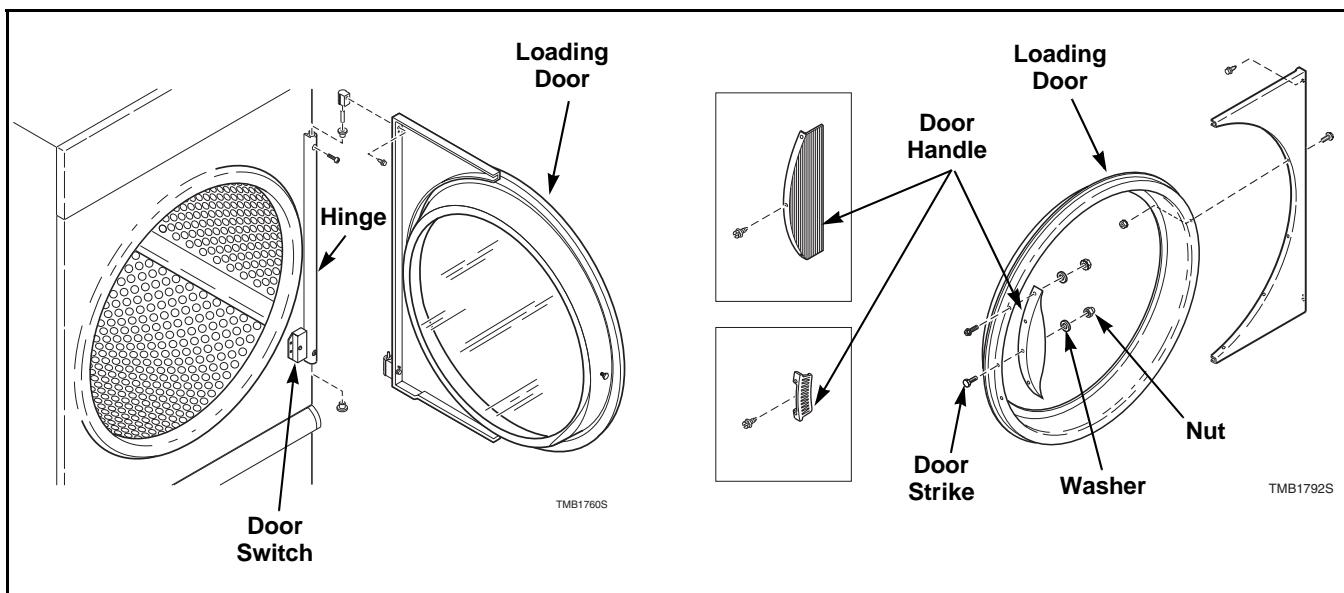


Figure 5



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

38. FRONT PANEL

- a. Remove four screws holding access panel to cabinet. Refer to *Figure 6*.
- b. Lift access panel off top edge of front panel and set aside to prevent damage. Refer to *Figure 6*.
- c. Remove control box cover. Refer to *Figure 1*.
- d. Remove screws from exterior control box cover. Refer to *Figure 1*.
- e. Remove control from mounting plate.
- f. Disconnect wires/harnesses and remove control.
- g. Open loading door.
- h. While supporting door, remove two screws from hinge cam at top of door and slide door out of the bottom hinge. Refer to *Figure 5*.
- i. Remove door.
- j. Remove screws holding door switch box to front panel.
- k. Disconnect wires and remove door switch.



WARNING

To reduce the risk of serious injury or death, loading door switch MUST be reinstalled after service is completed.

W328

- l. Open and remove lint panel. Set aside to prevent damage.
- m. Support front panel and remove screws holding front panel to tumbler cabinet. Refer to *Figure 6*.
- n. Remove front panel while carefully feeding door switch wires through hole in cabinet.

NOTE: Refer to wiring diagram when rewiring control and door switch.

Section 5 Service Procedures

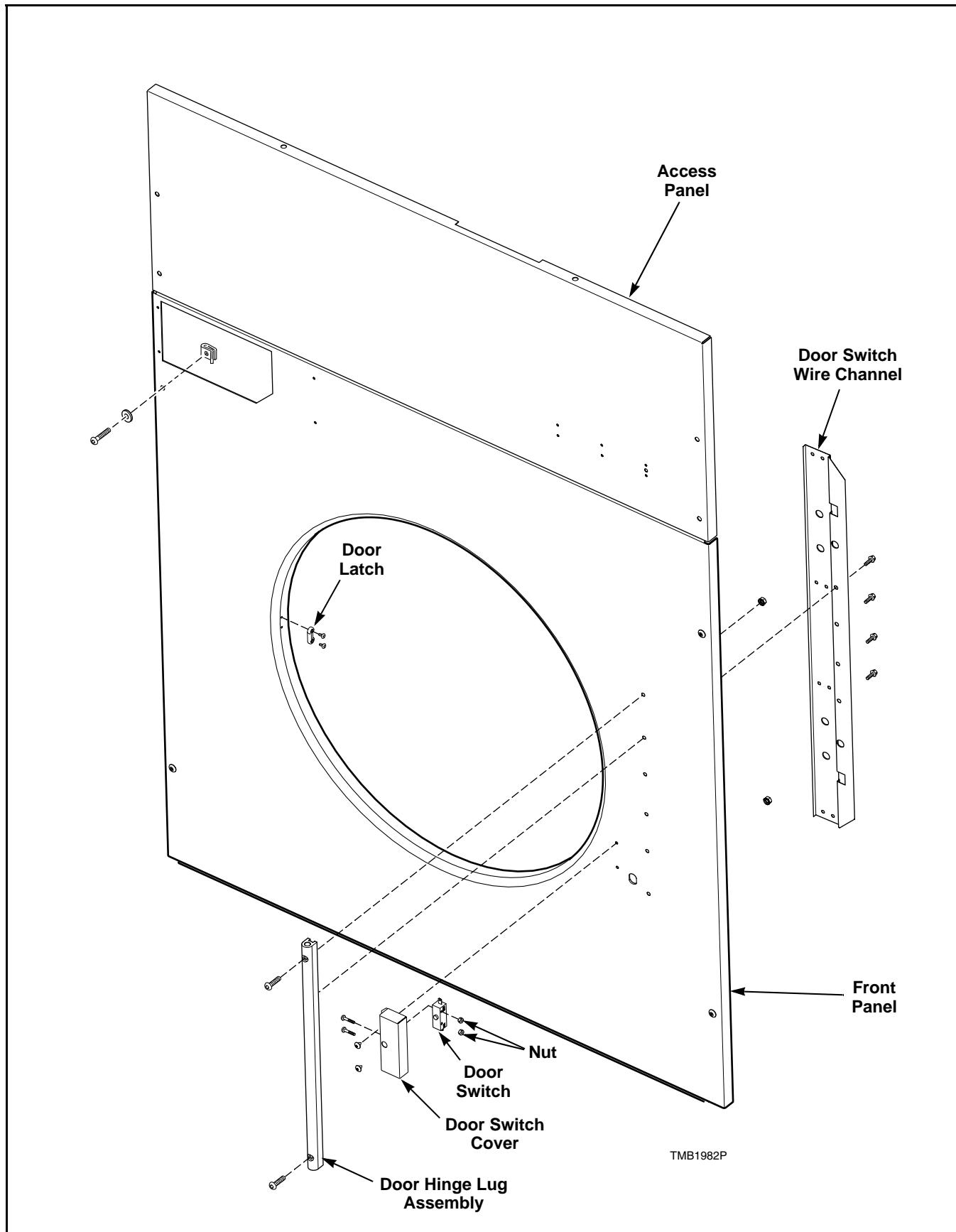


Figure 6



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

39. LOADING DOOR HINGE LUG

Refer to *Figure 5*.

- a. Open loading door until door is perpendicular to machine front.
- b. Remove bottom hex head screw from hinge cam at bottom of door.
- c. Remove lower cam assembly by sliding downward while disengaging setscrew from door hinge.
- d. Lift door assembly off top of door hinge lug.
- e. Remove four screws from top and bottom surfaces of exterior control box cover and remove cover, disconnecting control box cover harness or load ready light wire. Refer to *Figure 3*.
- f. Remove screw from left and right sides of control bracket securing control plate. Refer to *Figure 3*.
- g. Pivot plate forward to horizontal.
- h. Disconnect two plugs from wall of interior control box and disconnect control box cover harness (European models only).
- i. Remove four screws securing control mounting bracket to front panel, careful to support control plate assembly.

- j. Pull entire control assembly away from unit.
- k. Remove four screws securing front panel to cabinet frame. Pull front panel forward, disconnecting door switch harness plug at upper right corner of front panel to frame. Refer to *Figure 6*.
- l. Remove two screws holding switch cover to front panel.
- m. Disconnect wires from door switch.
- n. Remove two large screws and nuts top and bottom securing hinge lug to front panel.
- o. Remove four small screws securing hinge lug and door switch wire channel to rear of front panel.

40. THERMISTOR

Refer to *Figure 7*.

- a. Remove lint panel.
- b. Locate thermistor assembly on top of lint hood.
- c. Remove thermistor bracket mounting screws.
- d. Disconnect wiring from thermistor terminals.
- e. Unscrew thermistor from thermistor nut.

NOTE: Refer to wiring diagram when rewiring thermistor.

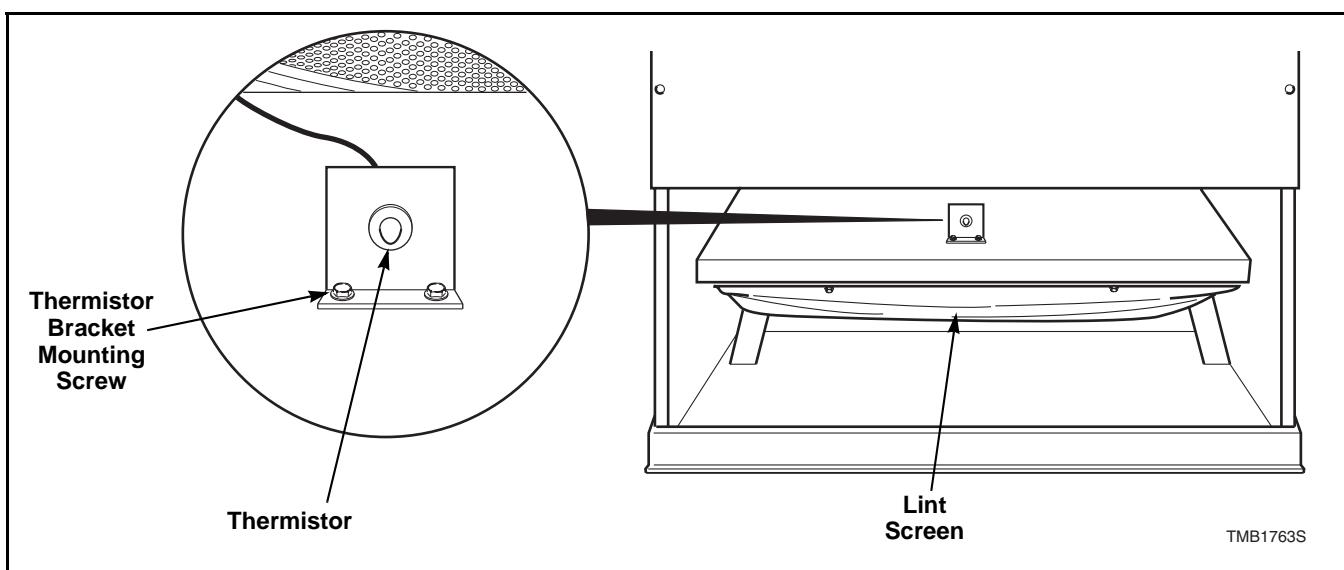


Figure 7



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

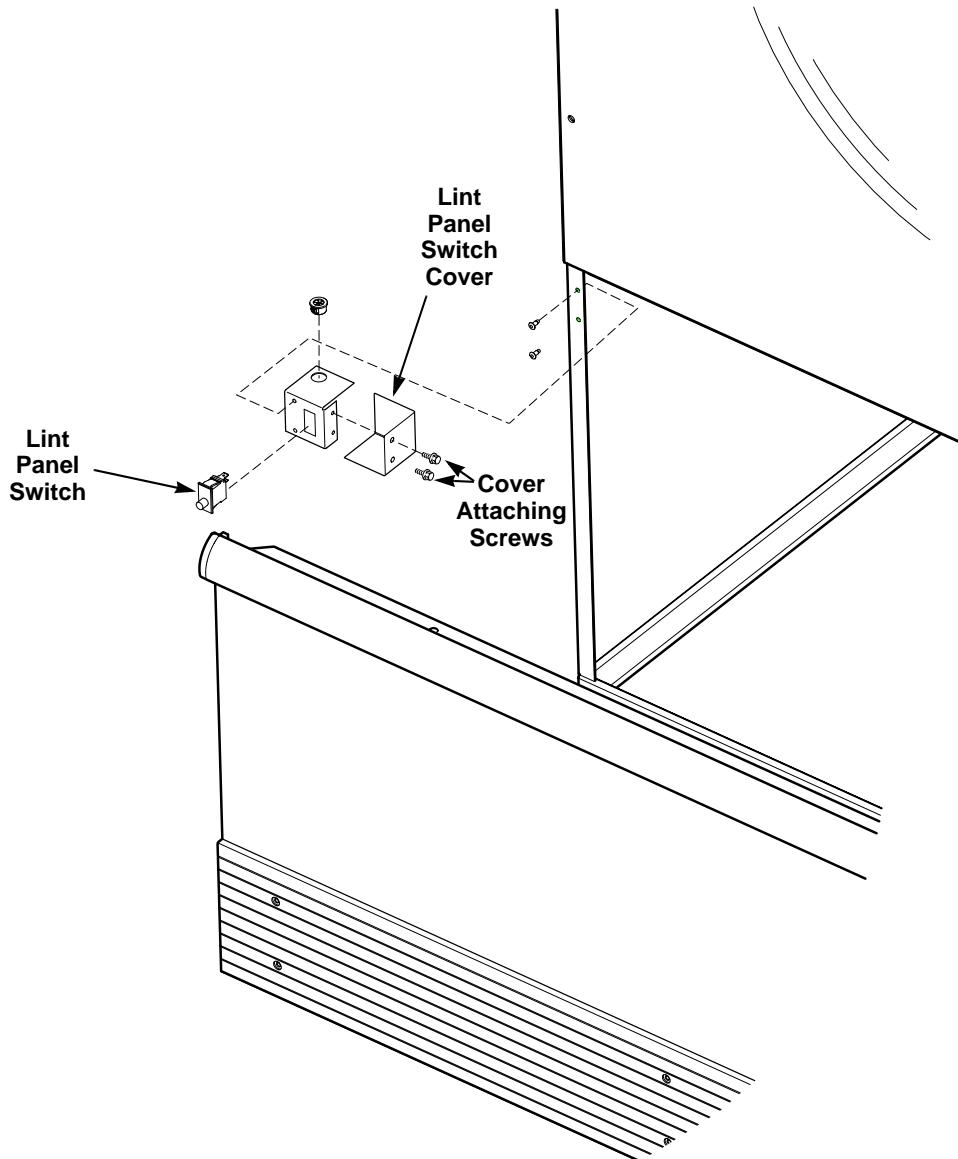
41. LINT PANEL SWITCH

Refer to *Figure 8*.

- a. Remove lint panel.

- b. Remove screws from switch cover and remove cover.

- c. Disconnect wires from switch and remove switch by depressing locking tabs on switch.



TMB1575P

Figure 8

**WARNING**

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

42. GAS VALVE

- a. Remove four screws holding access panel to cabinet. Refer to *Figure 6*.
- b. Lift access panel off top edge of front panel and pull panel forward. Refer to *Figure 6*.
- c. Close gas shut-off valve. Refer to *Figure 9*.
- d. Disconnect all wires from gas valve terminals and disconnect gas valve pipe unions.
- e. Remove screws holding gas valve and bracket to stove assembly.
- f. Remove gas valve from mounting bracket.

IMPORTANT: When reinstalling gas valve, purge air and sediment from the gas service line before connecting it loosely to the tumbler. Purge remaining air until odor of gas is detected, then tighten connection. Use pipe compound resistant to action of Liquid Petroleum Gas (L.P.) on all pipe threads.

NOTE: Refer to wiring diagram when rewiring gas valve.

**WARNING**

To reduce risk of fire or explosion, check pipe connections for gas leaks with a non-corrosive leak detection fluid. Do not use an open flame to check for gas leaks!

W310

43. IGNITER

Refer to *Figure 9*.

- a. Remove four screws holding access panel to cabinet. Refer to *Figure 6*.
- b. Lift access panel off top edge of front panel and pull panel forward. Refer to *Figure 6*.
- c. Disconnect high voltage lead from igniter.
- d. Remove two screws attaching igniter bracket to second (from right) burner tube.

44. IGNITION CONTROL

- a. Remove four screws holding access panel to cabinet. Refer to *Figure 6*.
- b. Lift access panel off top edge of front panel and pull panel forward. Refer to *Figure 6*.
- c. Remove interior control box cover. Refer to *Figure 1*.
- d. Disconnect wire harness.
- e. Remove high voltage lead.
- f. Remove two screws attaching ignition control unit to control housing. Refer to *Figure 2*.
- g. Remove ignition control unit.

45. BURNER TUBE

- a. Remove four screws holding access panel to cabinet. Refer to *Figure 6*.
- b. Lift access panel off top edge of front panel and pull panel forward. Refer to *Figure 6*.
- c. Close gas shut-off valve. Refer to *Figure 9*.
- d. Disconnect union nut attaching nipple to spudholder and remove spudholder. Refer to *Figure 9*.
- e. Remove igniter (if necessary). Refer to *Paragraph 43*.
- f. Remove screws holding burner tubes to stove front and remove burner tubes.

**WARNING**

When reinstalling spudholder, use non-corrosive leak detection fluid to check all pipe connections for gas leaks. DO NOT USE AN OPEN FLAME TO CHECK FOR GAS LEAKS! Make sure that spudholder and orifices are positioned such that gas will be injected directly down the center of the burner.

W269R1

Section 5 Service Procedures

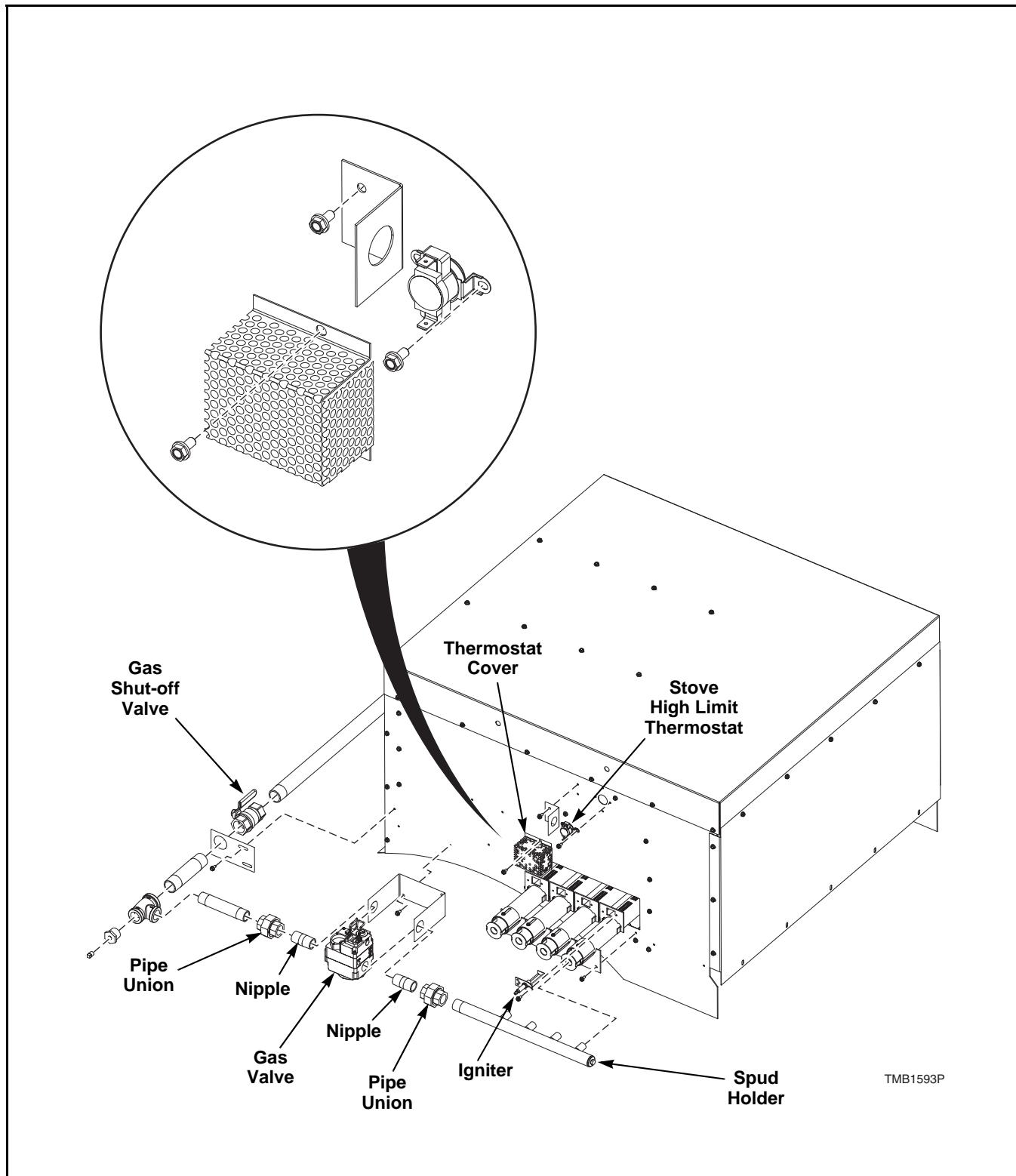


Figure 9



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

46. STOVE HIGH LIMIT THERMOSTAT (Gas Models)

- a. Remove four screws holding access panel to cabinet. Refer to *Figure 6*.
- b. Lift access panel off top edge of front panel and pull panel forward. Refer to *Figure 6*.
- c. Remove screws holding thermostat cover to stove.
- d. Remove thermostat cover. Refer to *Figure 9*.
- e. Disconnect wires to thermostat.
- f. Remove the two thermostat attaching screws. Refer to *Figure 9*.
- g. Remove thermostat.

47. CABINET HIGH LIMIT THERMOSTAT / LOAD READY THERMOSTAT

(Located on rear of tumbler near fan)

- a. Support drive guard cover and remove screws holding guard to rear of tumbler. Refer to *Figure 12*.
- b. Disconnect wires from thermostat. Refer to *Figure 10*.
- c. Remove two screws holding thermostat to rear of tumbler.

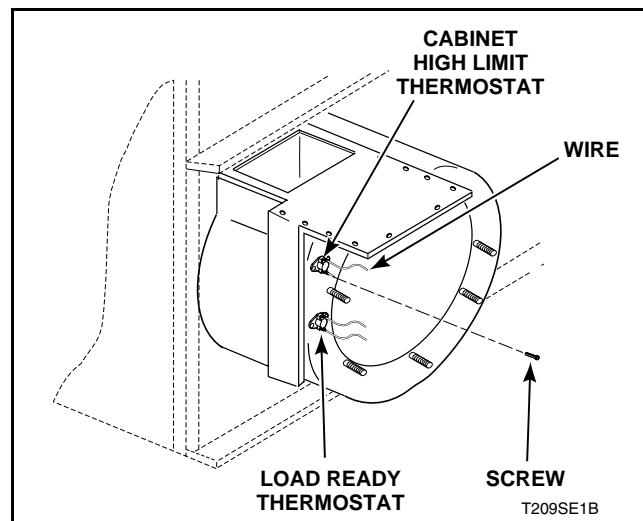


Figure 10



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

48. STEAM COILS

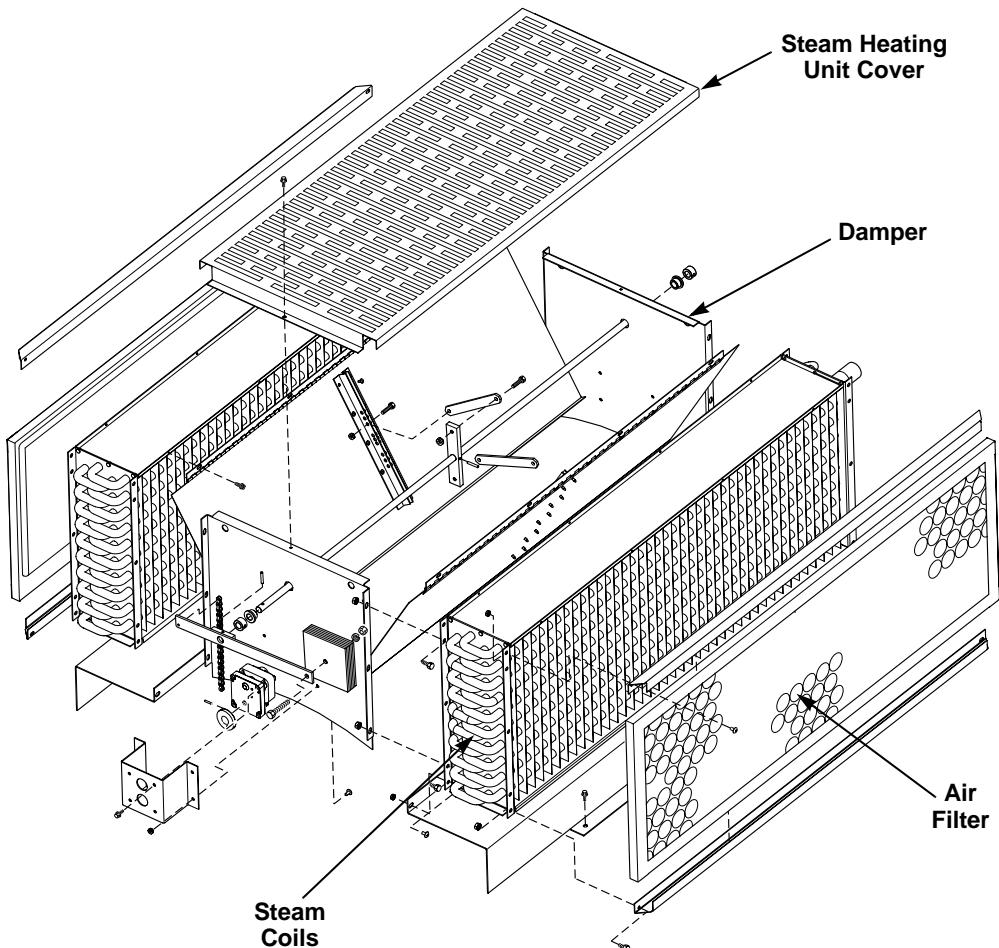
Refer to *Figure 11*.

NOTE: Allow steam coils to cool before handling.

- a. Shut off inlet and outlet valves and disconnect flex hoses from steam coils
- b. Remove screws holding cover to top of steam heating unit and remove cover.
- c. Remove air filters.

- d. Remove screws holding steam coils to coil frame.
- e. Remove screws from damper.
- f. Remove steam coils by lifting straight up and out of tumbler.

IMPORTANT: When removing or replacing steam coils, be careful not to damage fins on steam coils.



TMB1585P

Figure 11



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

49. DRIVE GUARD COVER / CORNER DRIVE GUARD

Refer to *Figure 12*.

- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler.

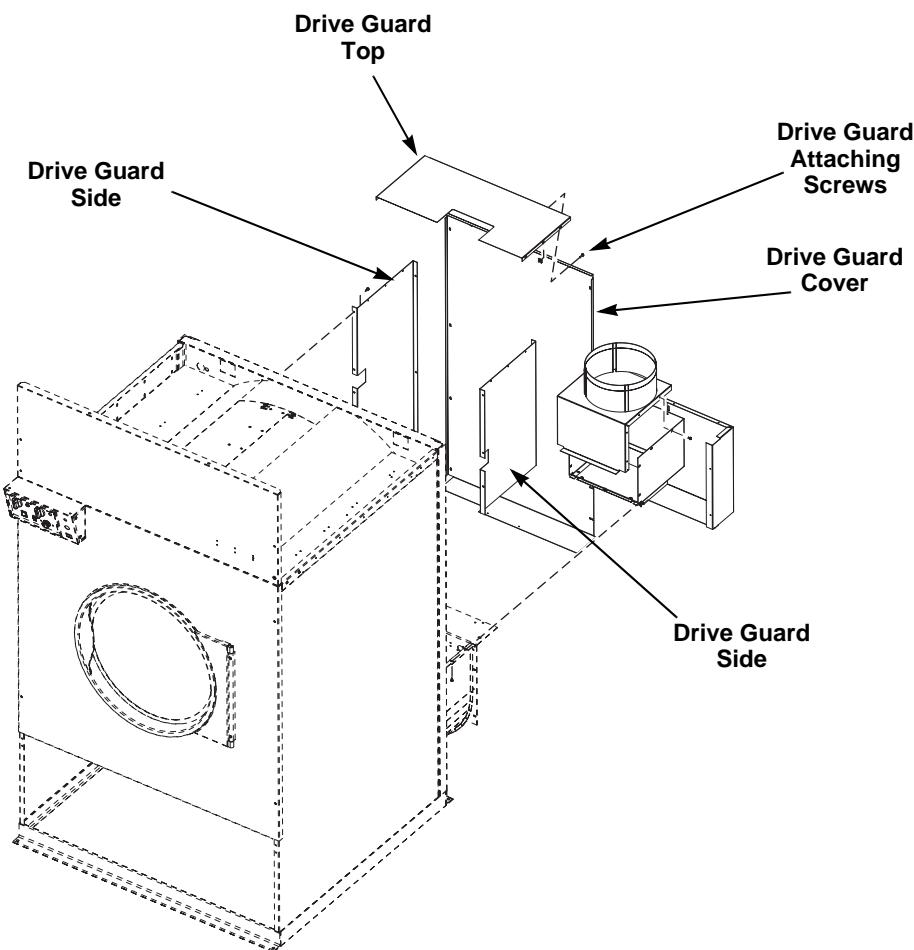


Figure 12



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

50. AIRFLOW SWITCH

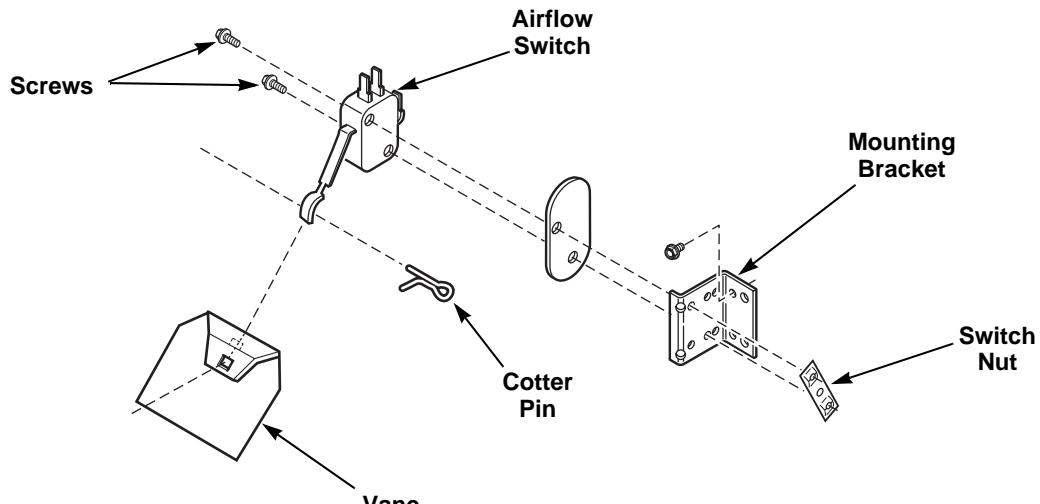
(Located at rear of tumbler above cylinder shaft)

- a. Support corner drive guard and remove screws holding corner drive to rear of tumbler. Refer to *Figure 12*.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler. Refer to *Figure 12*.
- c. Disconnect wires from switch. Refer to *Figure 13*.

NOTE: Refer to wiring diagram when rewiring airflow switch.

- d. Remove screw(s) holding switch and mounting bracket to tumbler. Refer to *Figure 13*.
- e. Remove two screws holding switch to mounting bracket.

NOTE: After reinstalling airflow switch and mounting bracket into switch box, adjust switch.



TMB2061P

Figure 13



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

51. CYLINDER BELTS

Refer to *Figure 15*.

- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler.
- c. Loosen the four jackshaft assembly attaching screws.
- d. Rotate the adjusting nuts counterclockwise (approximately three turns). Refer to *Figure 14*.
- e. Slide jackshaft assembly upwards to loosen the cylinder belts.
- f. Remove cylinder belts.

NOTE: After reinstalling belt, adjust drive belts and cylinder belt. Install new belts as a set of 3.

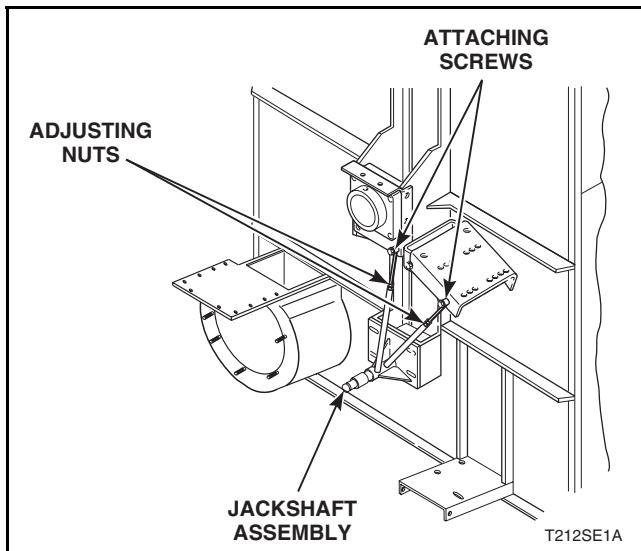


Figure 14

52. DRIVE BELT

Refer to *Figure 15*.

- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler.
- c. Loosen the four jackshaft assembly attaching screws.

- d. Rotate the adjusting nuts counterclockwise (approximately three turns).

- e. Slide jackshaft assembly upwards to loosen the cylinder belts.
- f. Remove cylinder belts.
- g. Remove drive belt.

NOTE: After reinstalling drive belt, adjust cylinder belts then drive belt.

53. STEP PULLEY ASSEMBLY

Refer to *Figure 15*.

- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler.
- c. Loosen the four jackshaft assembly attaching screws.
- d. Rotate the adjusting nuts counterclockwise (approximately three turns).
- e. Slide jackshaft assembly upwards to loosen the cylinder belts.
- f. Remove cylinder belt.
- g. Remove drive belts.
- h. Remove snap ring and pull step pulley off of jackshaft.

Refer to *Table 1* on page 42 for critical torques.

NOTE: Belt tension from step pulley to cylinder shaft pulley can be measured to ensure proper installation in one of the following ways:

- Burroughs Belt Tension Gauge initial reading 70-80 pounds.
- Force to deflect belt .38 inch at midspan with initial tensioning 6.5 pounds
- Burroughs Belt Tension Gauge reading after run 55-65 pounds.

**WARNING**

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

Critical Torques

Location (With nut threading)	Measurement in Inch Pounds	Measurement in Foot Pounds
Front cylinder shaft bearing to frame nut (1/2 – 13)	600 ± 60	50 ± 5
Rear cylinder shaft bearing to bearing plate nut (1/2 – 13)	600 ± 60	50 ± 5
Cylinder drive motor pulley bushing cap screw to cylinder drive motor pulley (10-24)	46 ± 5	
Cylinder drive motor pulley bushing set screw to cylinder drive motor shaft (10-24)	28 ± 3	
Cylinder shaft pulley (25.00 O.D.) QD bushing cap screw to cylinder pulley (3/8-16)	400 ± 40	33 ± 3
Cylinder shaft pulley (25.00 O.D.) QD bushing set screw to cylinder shaft (1/4-20)	68 ± 7	
Fan bushing cap screw to fan (10-24)	46 ± 5	
Fan bushing set screw to fan (10-24)	28 ± 3	
Fan motor pulley bushing cap screw to fan motor pulley (10-24)	46 ± 5	
Fan motor pulley bushing set screw to fan motor shaft (1/4-20)	68 ± 7	
Fan pulley bushing cap screw to fan shaft (1/4-20)	110 ± 11	
Fan pulley bushing set screw to fan shaft (1/4-20)	68 ± 7	

Table 1



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

54. CYLINDER SHEAVE

Refer to *Figure 15*.

- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler.
- c. Loosen the four jackshaft assembly attaching screws.
- d. Rotate the adjusting nuts counterclockwise (approximately three turns).

- e. Slide jackshaft assembly upwards to loosen the cylinder belts.
- f. Remove cylinder belts.
- g. Loosen bushing setscrew.
- h. Remove screws from tapered bushing.
- i. Remove tapered bushing by putting the screws removed in step "h" into the threaded holes in the bushing. Turning the screws inward will force the bushing out of the cylinder sheave.
- j. Remove cylinder sheave.

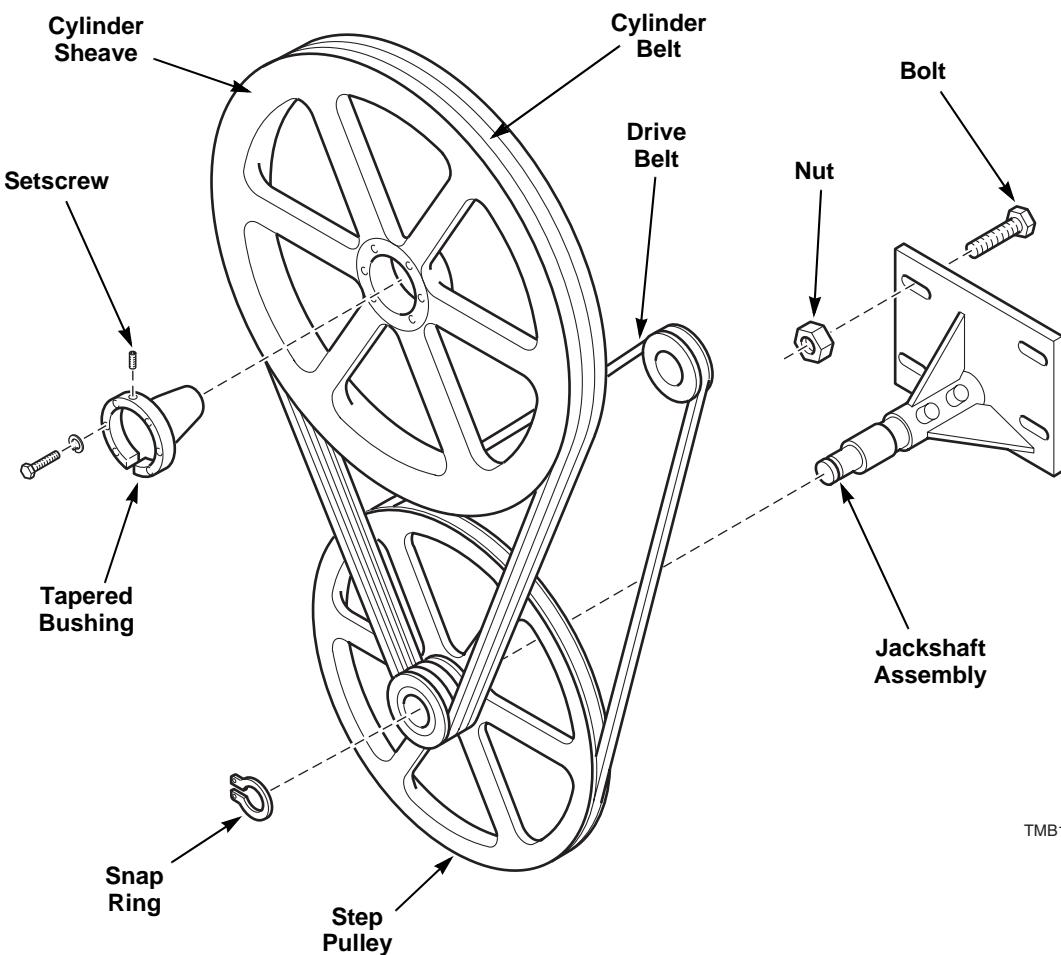


Figure 15



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

55. MOTOR PULLEY

- a. Remove drive belt.
- b. Loosen setscrews and, remove screws from tapered bushing. Refer to *Figure 16*.
- c. Remove tapered bushing by putting the screws removed in step "b" into the threaded holes in the bushing. Turning the screws inward will force the bushing out of the motor pulley.
- d. Remove motor pulley.

Refer to *Table 1* on page 42 for critical torques.

NOTE: Belt tension from cylinder drive motor pulley to step pulley can be measured to ensure proper installation in one of the following ways:

- Burroughs Belt Tension Gauge initial reading 60-70 pounds.
- Force to deflect belt .38 inch at midspan with initial tensioning 6.0 pounds
- Burroughs Belt Tension Gauge reading after run 45-55 pounds.

IMPORTANT: Realign cylinder motor pulley with step pulley by loosening the tapered bushing and repositioning the motor pulley on the cylinder motor shaft. Refer to *Figure 16*.

56. JACKSHAFT ASSEMBLY

Refer to *Figure 15*.

- a. Remove step pulley. Refer to *Paragraph 53*.
- b. Remove four bolts attaching jackshaft to the rear of tumbler.

NOTE: After installing step pulley, adjust belts.

57. CYLINDER ASSEMBLY

- a. Remove front panel assembly.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler. Refer to *Figure 12*.
- c. Loosen the four jackshaft assembly attaching nuts. Refer to *Figure 15*.
- d. Rotate the adjusting nuts counterclockwise (approximately three turns).

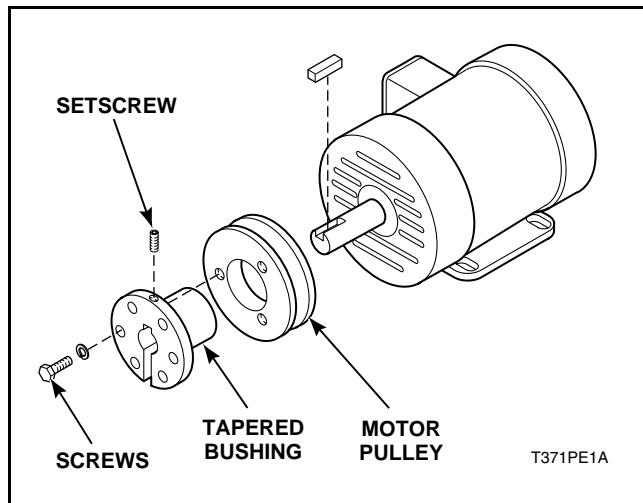


Figure 16

- e. Slide jackshaft assembly upwards to loosen the cylinder belts.
- f. Remove cylinder belts.
- g. Remove drive belt. Refer to *Figure 15*.
- h. Remove screws from tapered bushing. Refer to *Figure 16*.
- i. Remove tapered bushing by putting the screws removed in step "h" into the threaded holes in the bushing. Turning the screws inward will force the bushing out of the cylinder sheave.
- j. Remove cylinder sheave.
- k. Loosen setscrews on trunnion bearings. Refer to *Figure 17*.
- l. Pull cylinder through front of cabinet.

NOTE: After reinstalling drive and cylinder belts, adjust belts.

NOTE: Do not allow cylinder to rest on cabinet frame. Support cylinder vertically as it is removed from cabinet frame.



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

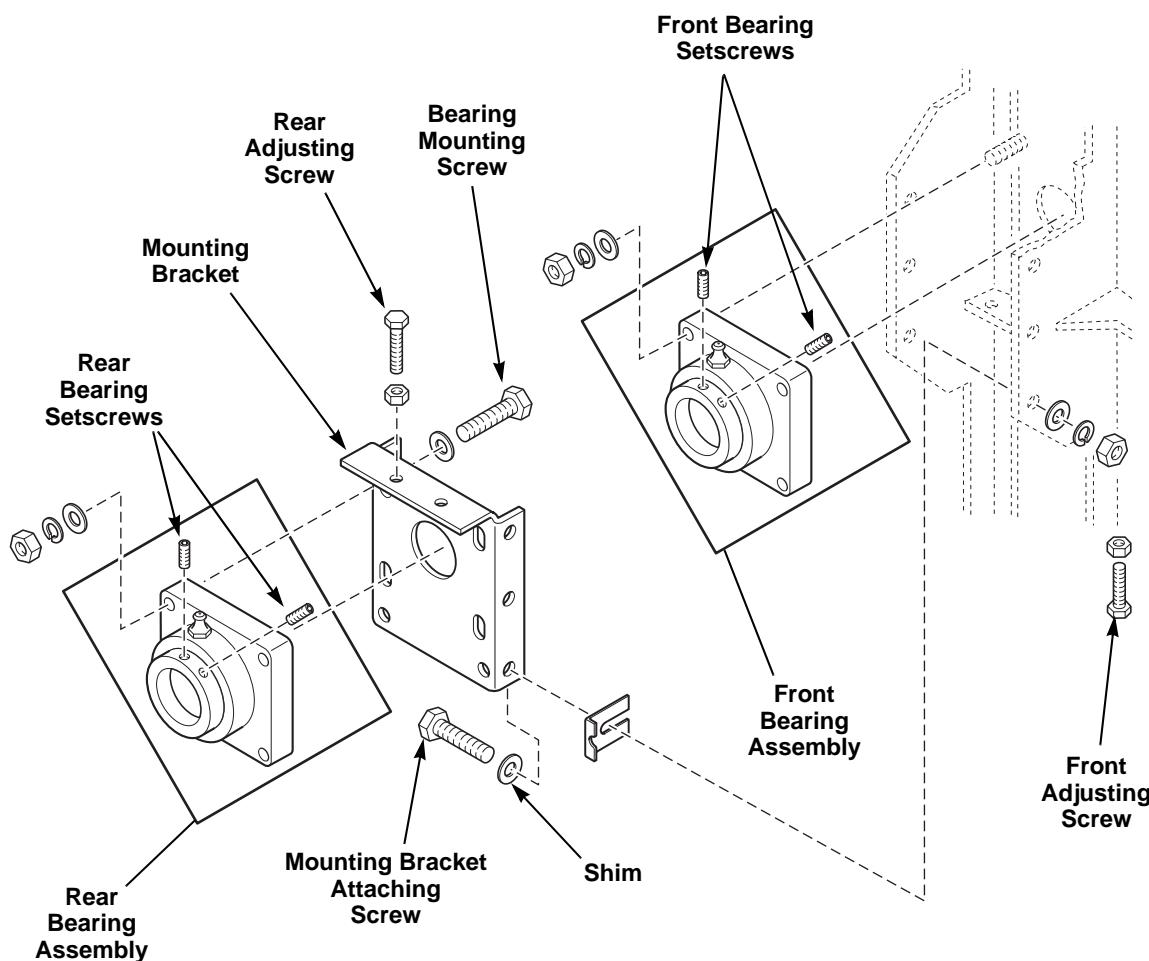
W002

58. TRUNNION BEARINGS

Refer to *Figure 17*.

- a. Remove front panel assembly.
- b. Place blocks under cylinder that will hold it level while trunnion bearings are being serviced.
- c. Remove cylinder sheave.
- d. Loosen the front and rear adjusting screws.
- e. Loosen setscrews holding bearings to shaft.

- f. Remove bearing mounting screws.
- g. Remove rear bearing.
- h. Remove screws holding mounting bracket to tumbler.
- i. Remove mounting bracket.
- j. Remove front bearing mounting nuts.
- k. Loosen setscrews holding bearing to shaft.
- l. Remove front bearing.



TMB1984P

Figure 17



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

59. FAN BELT

- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler. Refer to *Figure 12*.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler. Refer to *Figure 12*.
- c. Loosen fan belt with adjusting nuts. Refer to *Figure 18*.
- d. Remove fan belt.

NOTE: After reinstalling fan belt, adjust belt tension.

60. FAN MOTOR PULLEY

- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler. Refer to *Figure 12*.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler. Refer to *Figure 12*.
- c. Loosen fan belt with adjusting nuts. Refer to *Figure 18*.
- d. Remove fan belt.
- e. Loosen setscrews and remove screws from tapered bushing.
- f. Remove tapered bushing by putting the screws removed in step "e" into the threaded holes in the bushing. Turning the screws inward will force the bushing out of the motor pulley.
- g. Remove fan motor pulley.

Refer to *Table 1* on page 42 for critical torques.

NOTE: Belt tension from fan motor pulley to fan shaft pulley can be measured to ensure proper installation in one of the following ways:

- Burroughs Belt Tension Gauge initial reading **75-80 pounds**.
- Force to deflect belt **.38 inch at midspan with initial tensioning 5.0 pounds**
- Burroughs Belt Tension Gauge reading after run **60-65 pounds**.

61. FAN PULLEY

Refer to *Figure 18*.

- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler. Refer to *Figure 12*.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler. Refer to *Figure 12*.
- c. Loosen fan belt with adjusting nuts.
- d. Remove fan belt.
- e. Loosen setscrew and remove screws from tapered bushing.
- f. Remove tapered bushing by putting the screws removed in step "e" into the threaded holes in the tapered bushing. Turning the screws inward will force the bushing off of the tapered bushing.
- g. Remove tapered bushing and fan pulley from blower shaft.

Refer to *Table 1* on page 42 for critical torques.



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

62. FAN MOTOR

Refer to *Figure 18*.

- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler. Refer to *Figure 12*.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler. Refer to *Figure 12*.
- c. Loosen fan belt with adjusting nuts.
- d. Remove fan belt.
- e. Remove fan motor pulley.
- f. Remove screws holding fan motor to motor base.
- g. Disconnect wires from motor.
- h. Remove fan motor.

Refer to *Table 1* on page 42 for critical torques.

NOTE: Refer to wiring diagram when rewiring motor.

63. FAN ASSEMBLY

Refer to *Figure 18*.

- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler. Refer to *Figure 12*.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler. Refer to *Figure 12*.
- c. Loosen fan belt with adjusting nuts.
- d. Remove fan belt.
- e. Remove fan pulley.
- f. Remove step pulley assembly.
- g. Remove nuts holding blower cover to rear of tumbler.
- h. Remove blower cover and fan assembly from tumbler.
- i. Remove screws holding tapered bushing to fan.
- j. Remove tapered bushing by putting the screws removed in previous step into the threaded holes in the bushing. Turning the screws inward will force the bushing off the fan.
- k. Remove fan from blower shaft.

NOTE: If replacing a worn bushing with a new one, do not use the screws that come with a newly ordered bushing. Reuse the longer old bushing screws or order the screws shown in the parts manual.

Section 5 Service Procedures

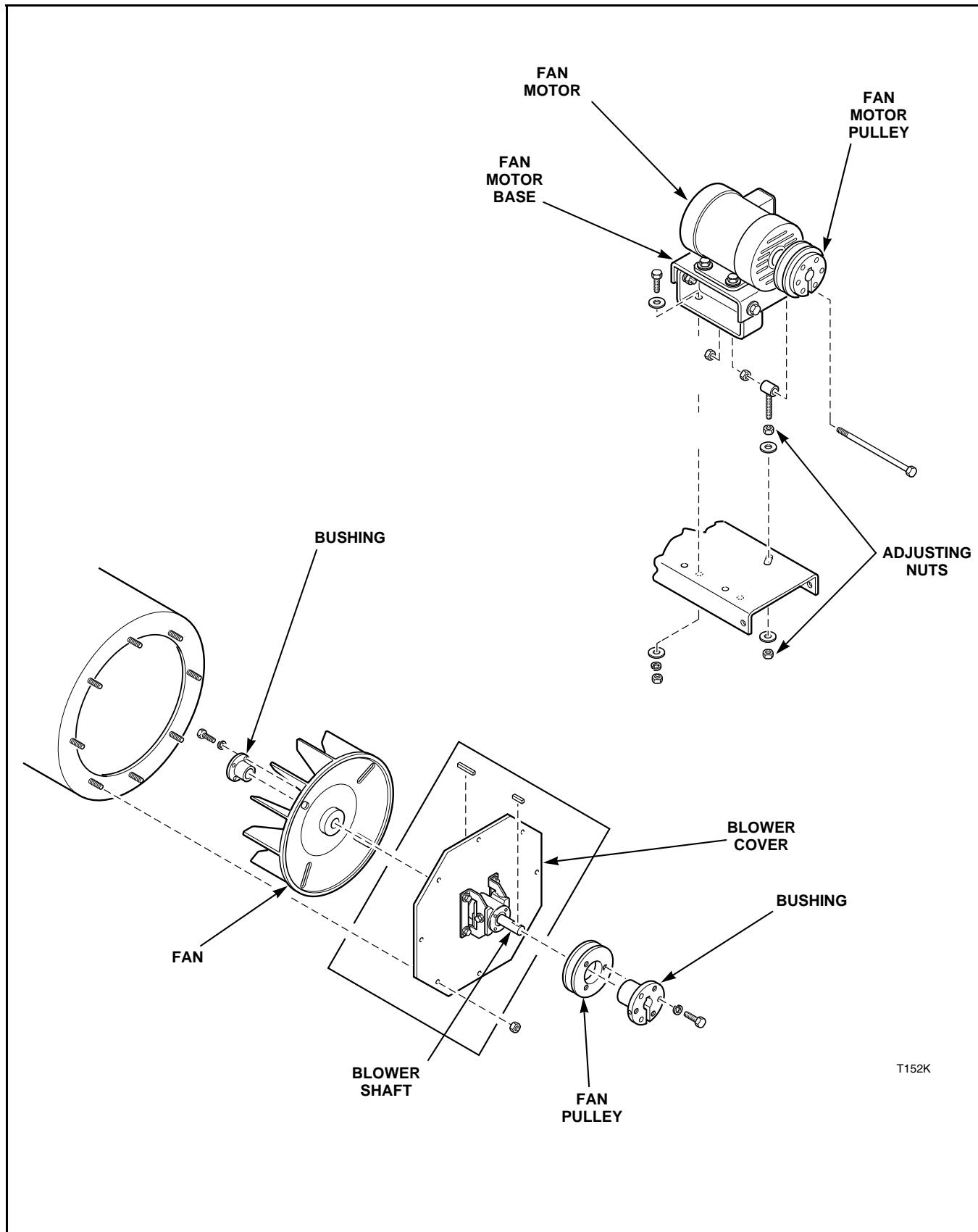


Figure 18



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

64. TRUNNION SHAFT ASSEMBLY

- a. Remove front panel assembly.
- b. Remove cylinder belts and drive belt.
- c. Remove cylinder sheave.
- d. Loosen setscrews on trunnion bearings. Refer to *Figure 17*.
- e. Pull cylinder through front of cabinet.

NOTE: When removing cylinder out through front of cabinet, spread cabinet slightly so cylinder will clear cabinet sides.

NOTE: Do not allow cylinder to rest on cabinet frame. Support cylinder vertically as it is removed from cabinet frame.

- f. Remove the eight washers and nuts holding trunnion shaft assembly to rear of cylinder. Refer to *Figure 19*.

IMPORTANT: When installing trunnion assembly on cylinder, the cylinder and shaft must be aligned. Refer to *Figure 19*. Measure the distance between the center of the trunnion shaft and the outer rim of the cylinder at the four points shown. If any measurement is less than the largest, place spacer(s) between trunnion arm and cylinder back until all measurements are equal.

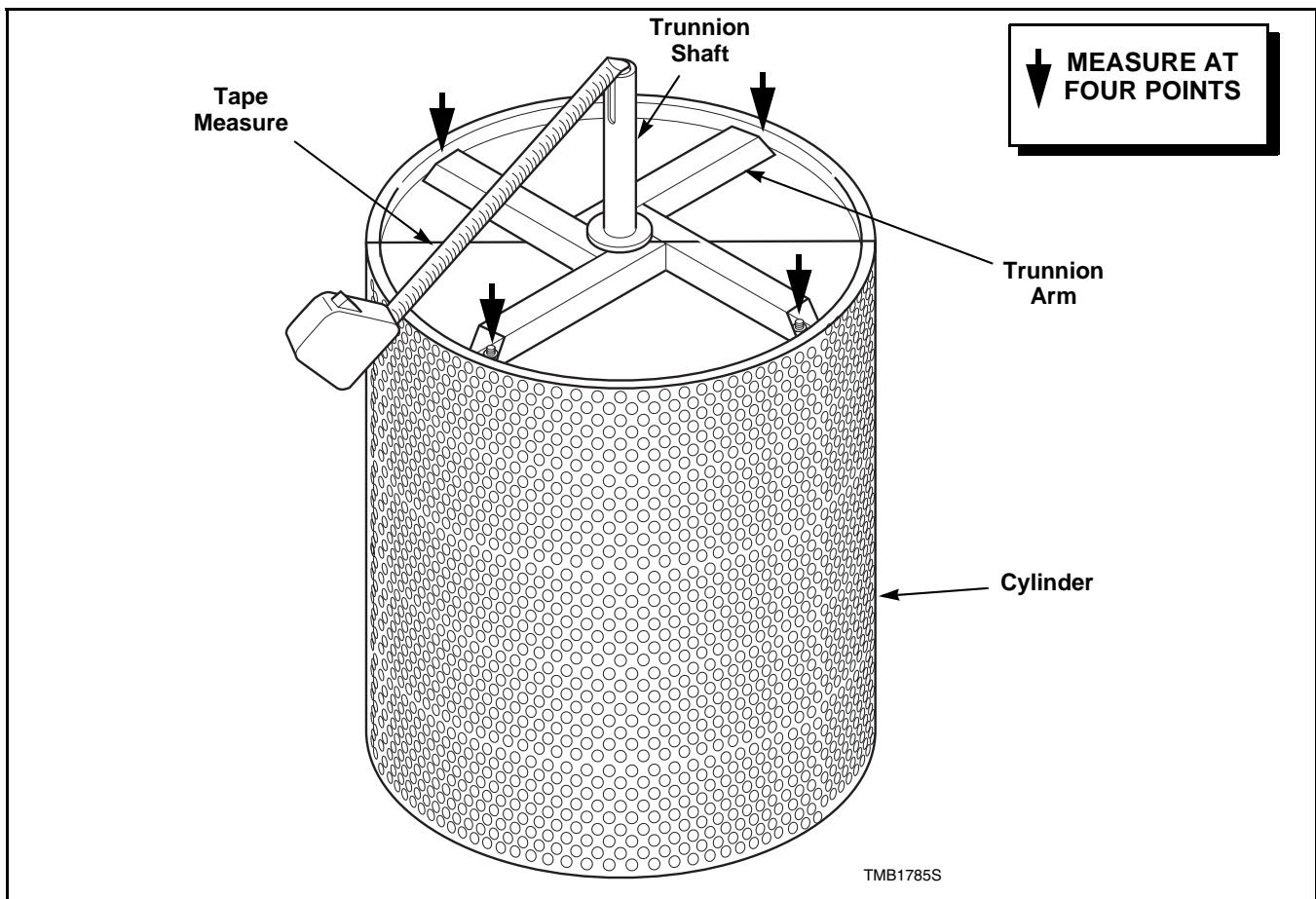


Figure 19



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

65. CYLINDER DRIVE MOTOR

- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler. Refer to *Figure 12*.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler. Refer to *Figure 12*.
- c. Remove drive belt.
- d. Mark location of motor on the motor mounting bracket and remove screws and nuts holding motor to mounting bracket. Refer to *Figure 20*.
- e. Disconnect wire harness from motor.
- f. Remove motor pulley.
- g. After installing motor, adjust cylinder belt then drive belt.

Refer to *Table 1* on page 42 for critical torques.

NOTE: Refer to wiring diagram when rewiring the motor.

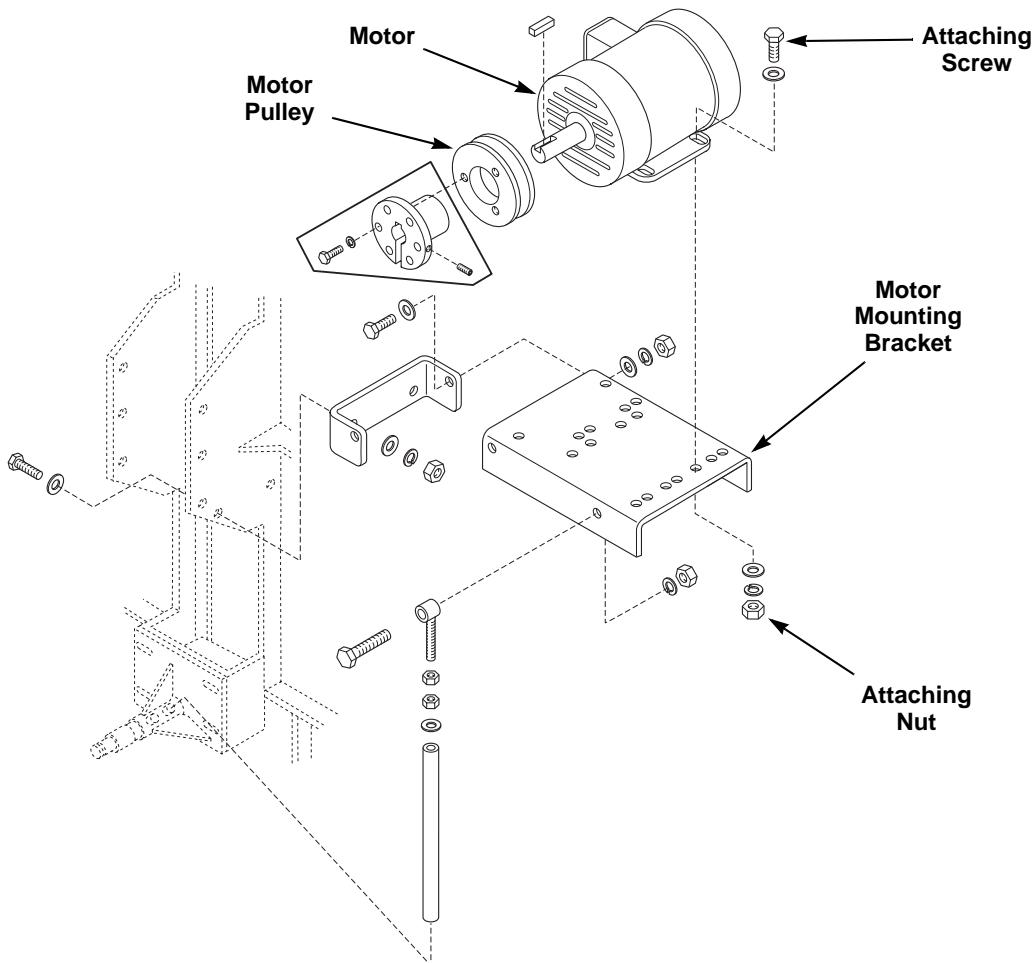


Figure 20

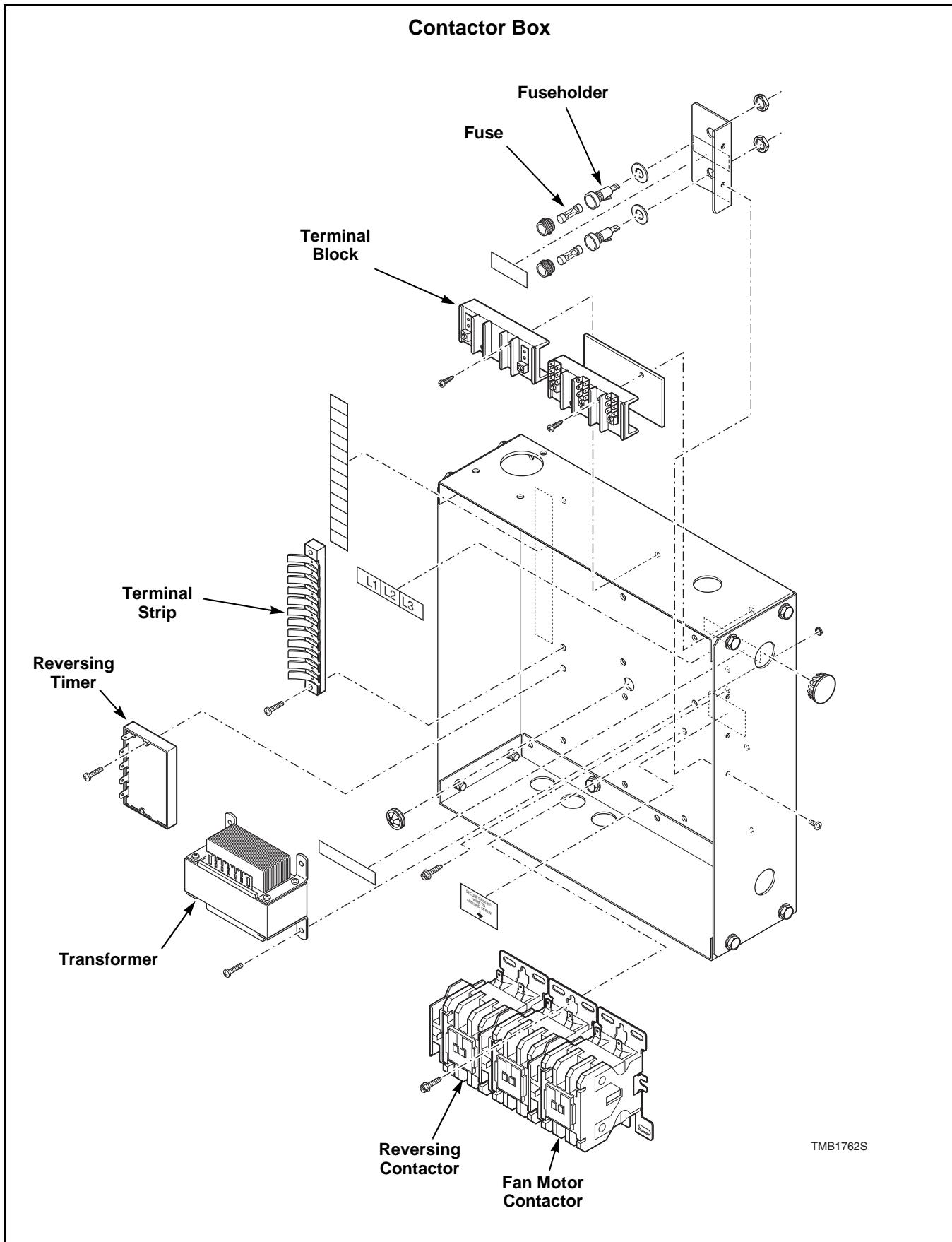


Figure 21



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

66. REVERSING TIMER

(Manual Timer Models Only)

Refer to *Figure 21*.

- a. Remove two attaching screws and cover from contactor box.
- b. Disconnect wires from reversing timer.

NOTE: Refer to wiring diagram when rewiring timer motor and switches.

- c. Remove two screws holding reversing timer to back wall of contactor box.
- d. Remove reversing timer.

67. REVERSING CONTACTOR

Refer to *Figure 21*.

- a. Remove two attaching screws and cover from contactor box.
- b. Disconnect wires from contactor terminals.

NOTE: Refer to wiring diagram when rewiring reversing contactor.

- c. Remove screws holding reversing contactor to back wall of contactor box.
- d. Remove reversing contactor.

68. FAN MOTOR CONTACTOR

Refer to *Figure 21*.

- a. Remove two attaching screws and cover from contactor box.
- b. Disconnect wires from contactor terminals.

NOTE: Refer to wiring diagram when rewiring fan motor contactor.

- c. 50 Hertz models:** Remove two screws holding din rail to back wall of contactor box, then slide contactor off din rail.

60 Hertz models: Remove screws holding contactor to contactor box.

69. TRANSFORMER

Refer to *Figure 21*.

- a. Remove two attaching screws and cover from contactor box.
- b. Disconnect leads from transformer terminals.

NOTE: Refer to wiring diagram when rewiring transformer.

- c. Remove four screws holding transformer to contactor box.

- d. Remove transformer.

70. EXHAUST SYSTEM COMPONENTS

Refer to *Figure 22*.

- a. Support corner drive guard and remove screws holding corner drive to rear of tumbler.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler.
- c. Remove vent pipe.
- d. Remove attaching screws and thimble assembly from duct box wrap.
- e. Remove attaching screws, duct box wrap, and damper assembly from tumbler.

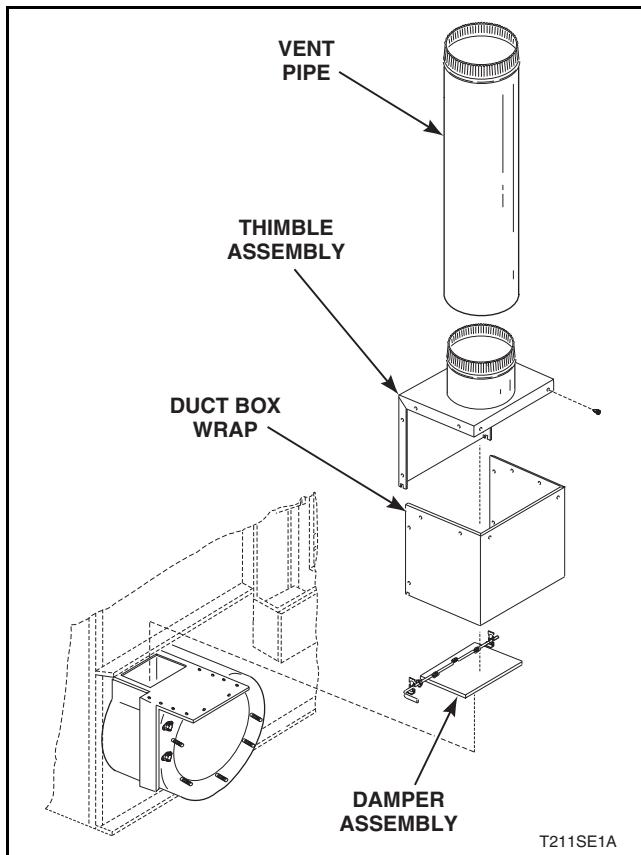


Figure 22

Section 6

Adjustments



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

71. LEVELING

NOTE: It is recommended that the front of the tumbler be kept slightly higher than the rear (approximately 1/8 inch, 3.0 mm). This will prevent the clothes, while tumbling, from wearing on the door glass gasket.

- a. Check the front to rear level by rotating the clothes cylinder until one of the cylinder ribs is at the bottom. Place a level on the rib.
- b. Check the side to side level by placing a level on access panel top and rear frame top angle.



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

72. MAIN GAS BURNER AIR INLET SHUTTERS



CAUTION

The air inlet shutters on the burner must be adjusted so sufficient primary air is metered into the system for proper combustion and maximum efficiency. Before adjusting the inlet shutter be sure that all lint is removed from lint compartment and lint screen.

W281

Air inlet shutter adjustments will vary from location to location and will depend on the vent system, number of units installed, make-up air and line gas pressure. Opening the shutter increases the amount of primary air supplied to the burner while closing the shutter decreases the air supply. Adjust air shutter as follows:

- a. Remove the access panel.
- b. Start the tumbler and check the flame pattern. Correct air and gas mixture is indicated if the flame pattern is primarily blue, with small yellow tips, and bends to the left of the heater section. Refer to *Figure 23*. Too little air is indicated if the flame is yellow, lazy and smokey.
- c. To adjust the air inlet shutter, loosen adjusting screw.
- d. Slide shutter in or out as necessary to obtain desired flame intensity.
- e. After shutter is adjusted, tighten adjusting screw securely.
- f. If the flame pattern is straight up, insufficient air is flowing through the tumbler. Refer to *Figure 23*. A flame pattern that flares to the right and left indicates that no air is flowing through the tumbler.

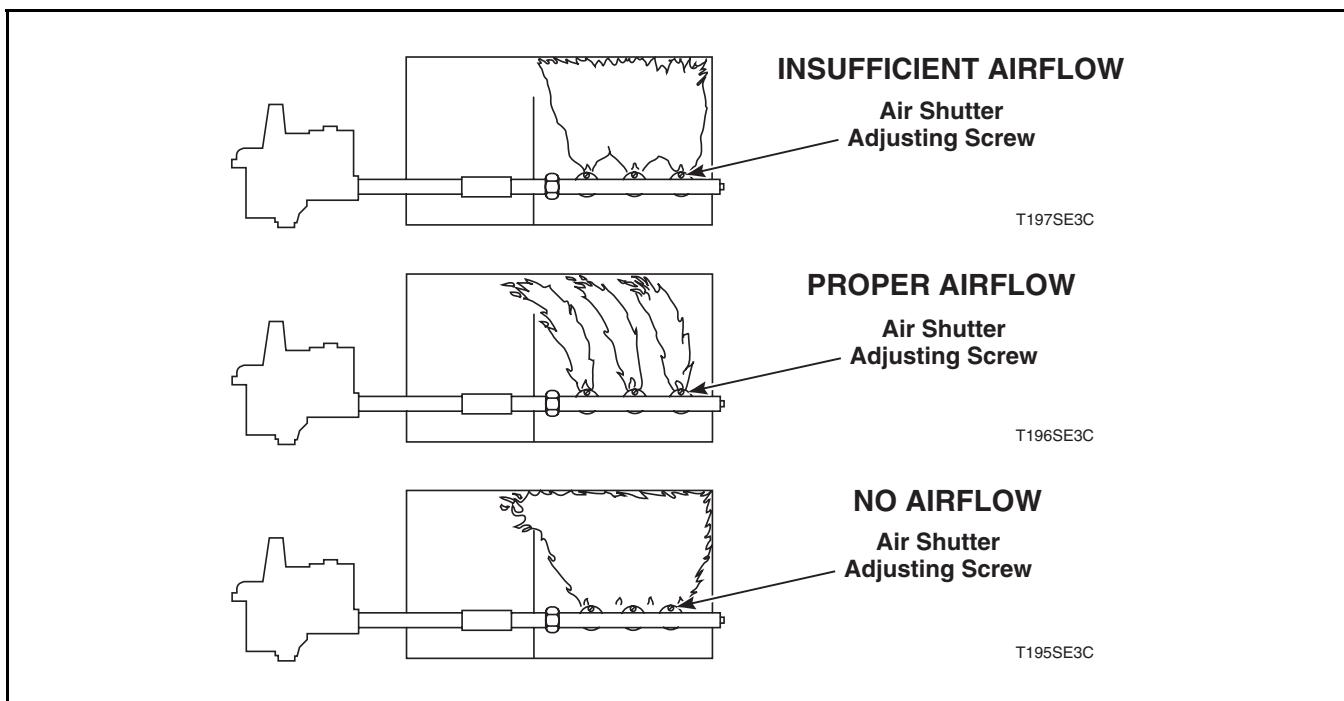


Figure 23



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

73. AIRFLOW SWITCH

The airflow switch is set at the factory for proper operation. No adjustment necessary. Refer to *Figure 24*.

IMPORTANT: Airflow switch vane must remain closed during operation. If it opens and closes during the drying cycle, this indicates insufficient airflow through the tumbler. If switch remains open, or pops open and closed during the cycle, the heating system will shut off. The cylinder and fan will continue to operate even though the airflow switch is indicating insufficient airflow.

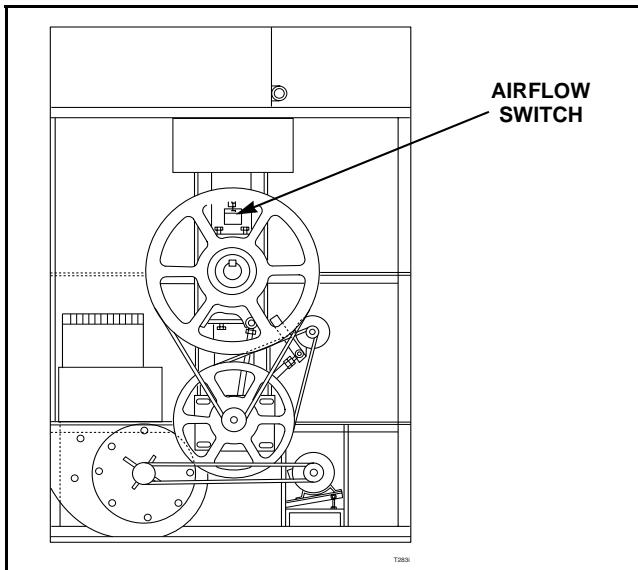


Figure 24

74. LOADING DOOR STRIKE

Refer to *Figure 25*.

The door strike must be adjusted so it has sufficient tension to hold loading door closed against the force of a tumbling load. The door strike is properly adjusted when 8-15 lbs. (17.6-33 kg) of pull is required to open door.

To adjust, open door, loosen nut and turn door strike screw in or out as required. Retighten nut.

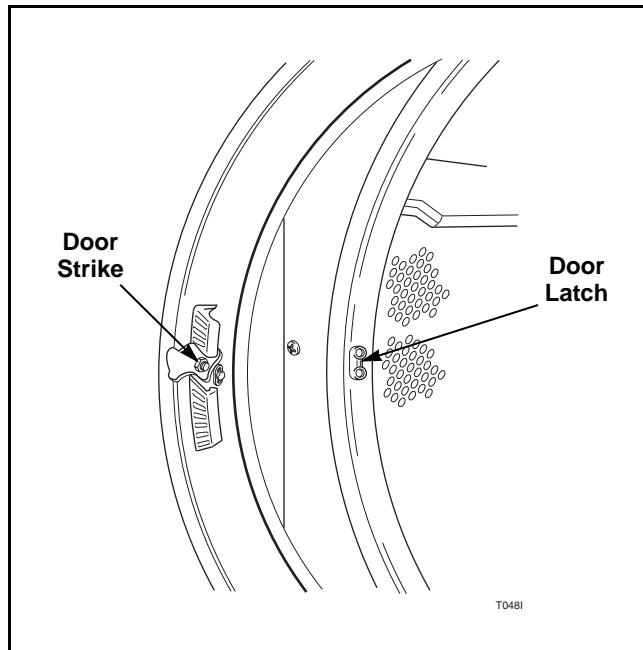


Figure 25

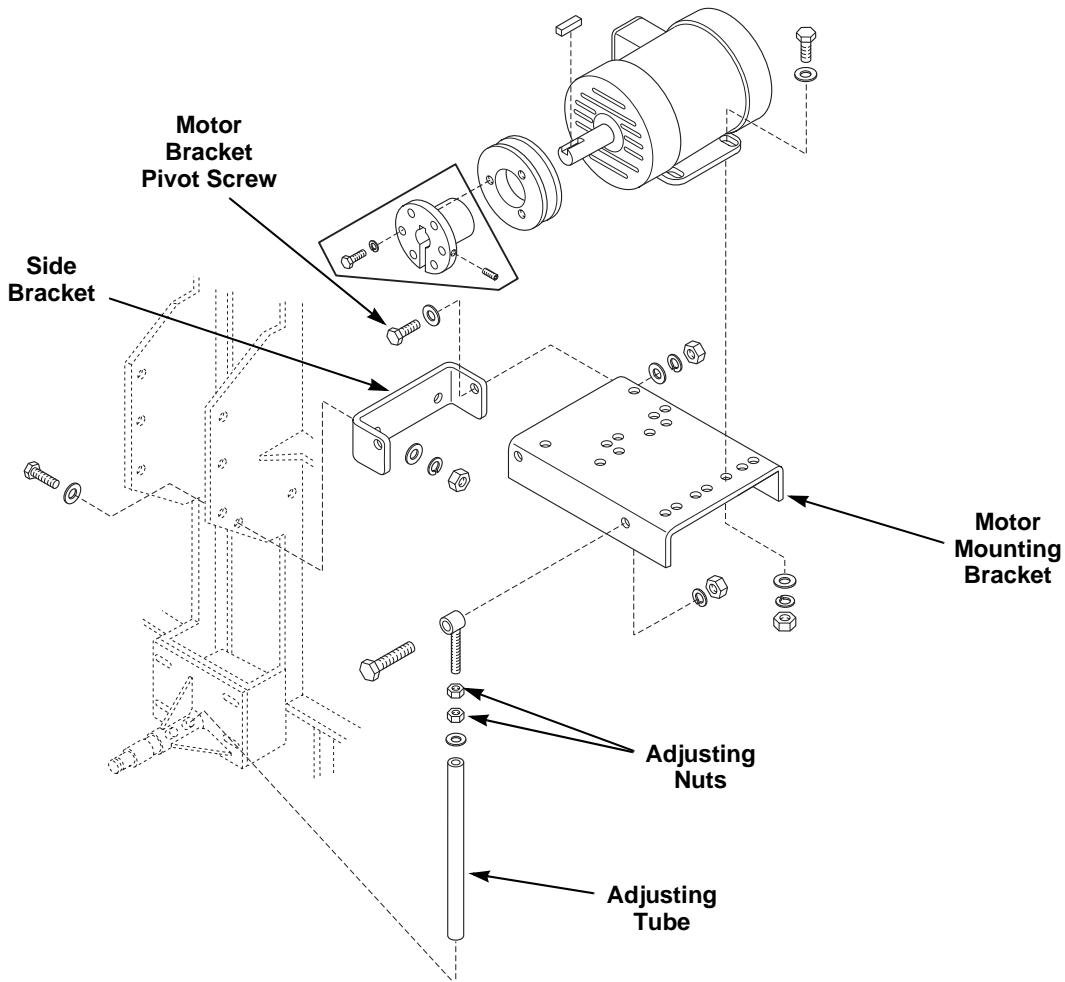


WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002



TMB1986P

Figure 26

75. CYLINDER BELT TENSION

NOTE: Belt tension from cylinder drive motor pulley to step pulley can be measured to ensure proper installation in one of the following ways:

- Burroughs Belt Tension Gauge initial reading 60-70 pounds.
- Force to deflect belt .38 inch at midspan with initial tensioning 6.0 pounds

- Burroughs Belt Tension Gauge reading after run 45-55 pounds.

- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler.
- c. Loosen the four jackshaft assembly attaching screws. Refer to *Figure 27*.



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

- d. Loosen adjusting nuts on outer eyebolt and rotate bottom nut clockwise until proper tension is reached. Refer to *Figure 26*.
- e. Retighten all nuts and screws.
- f. Readjust drive belt.

IMPORTANT: Adjusting the cylinder belt tension WILL AFFECT the drive belt tension. You MUST check and readjust the drive belt tension after adjusting the cylinder belt tension.

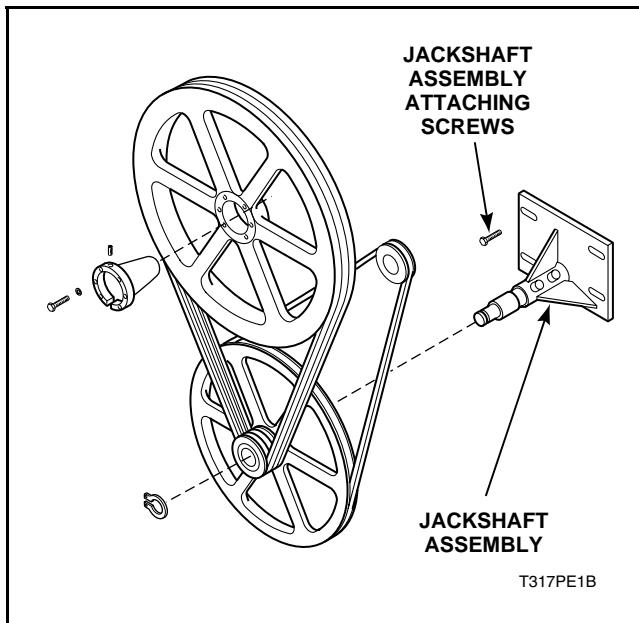


Figure 27

76. DRIVE BELT TENSION

Refer to *Figure 26*.

NOTE: If cylinder belts will be adjusted, service them before drive belt.

NOTE: Belt tension from step pulley to cylinder shaft pulley can be measured to ensure proper installation in one of the following ways:

- Burroughs Belt Tension Gauge initial reading 70-80 pounds.
 - Force to deflect belt .38 inch at midspan with initial tensioning 6.5 pounds.
 - Burroughs Belt Tension Gauge reading after run 55-65 pounds.
- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler.
 - b. Support drive guard cover and remove screws holding guard to rear of tumbler.
 - c. Reinstall drive guard.
 - d. Loosen the two side bracket attaching screws.
 - e. Turn the adjusting nuts clockwise until proper tension is reached.
 - f. Tighten all nuts and screws.



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

77. FAN BELT TENSION

Refer to *Figure 28*.

NOTE: Belt tension from fan motor pulley to fan shaft pulley can be measured to ensure proper installation in one of the following ways:

- Burroughs Belt Tension Gauge initial reading 75-80 pounds.
- Force to deflect belt .38 inch at midspan with initial tensioning 5.0 pounds
- Burroughs Belt Tension Gauge reading after run 60-65 pounds.

- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler.
- c. Loosen the two mounting bracket attaching screws.
- d. Raise or lower eye bolt until proper tension is reached.
- e. Retighten all nuts and screws.

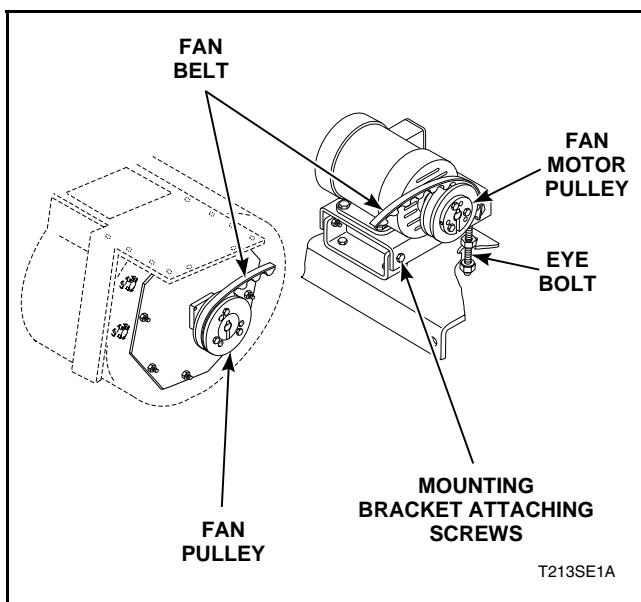


Figure 28



WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- Disconnect electric power to the tumbler before servicing.
- Close gas shut-off valve to gas tumbler before servicing.
- Close steam valve to steam tumbler before servicing.
- Never start the tumbler with any guards/panels removed.
- Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the tumbler is properly grounded.

W002

78. CYLINDER CLEARANCE

The clearance between the cylinder rim and front panel must be adjusted so the cylinder is centered within the front panel opening when the cylinder is fully loaded and is turning. However, the adjustment should be made when the cylinder is empty.

NOTE: If the cylinder is not properly adjusted, the cylinder rim will rub against the front panel.

- a. Open loading door.
- b. Check the gap between the center of the front panel top flange and the cylinder rim. Proper adjustment is when the gap is $8/32$ inch $\pm 3/32$ inch. Refer to *Figure 29*. Perform steps “a” through “g” to adjust the cylinder rim/front panel flange clearance.
- c. Check the cylinder fore/aft clearance between the inside front of the cylinder and the edge of the front panel flange. Proper adjustment is when the gap is $9/32$ inch $\pm 1/32$ inch. Refer to *Figure 29*. Perform steps ‘h’ through ‘m’ to adjust the cylinder fore/aft clearance.

CYLINDER RIM/FRONT PANEL FLANGE CLEARANCE ADJUSTMENT

- a. Support corner drive guard and remove screws holding corner guard to rear of tumbler.
- b. Support drive guard cover and remove screws holding guard to rear of tumbler.
- c. Loosen rear bearing mounting screws. Refer to *Figure 30*.
- d. Loosen the locknuts on rear adjustment screws. Refer to *Figure 30*.
- e. Turn the adjusting screws in or out as necessary to obtain proper clearance between cylinder rim and front panel.

NOTE: Turning the adjusting screws clockwise will raise the cylinder and turning them counter-clockwise will lower the cylinder. Turn both screws evenly to adjust top and bottom clearance. Turn one or the other adjusting screw in or out to adjust side clearance.

- f. After the cylinder is properly adjusted, tighten the adjusting screw locknuts and the rear bearing mounting screws.
- g. Install drive guard cover. Refer to *Paragraph 49*.

NOTE: If adjusting the trunnion housing fails to correct the clearance, the problem is probably due to a worn trunnion shaft or defective bearings.

CYLINDER FORE/AFT CLEARANCE ADJUSTMENT

- h. Support corner drive guard and remove screws holding corner guard to rear of tumbler.
- i. Support drive guard cover and remove screws holding guard to rear of tumbler.
- j. Loosen setscrews in the front bearing assembly collar and rear bearing assembly collar. Refer to *Figure 30*.
- k. Move cylinder assembly in or out as necessary to obtain proper clearance between the cylinder and the front panel.
- l. After the cylinder is properly adjusted, tighten setscrews in the front and rear bearing assembly collars.
- m. Install drive guard cover. Refer to *Paragraph 49*.

Section 6 Adjustments

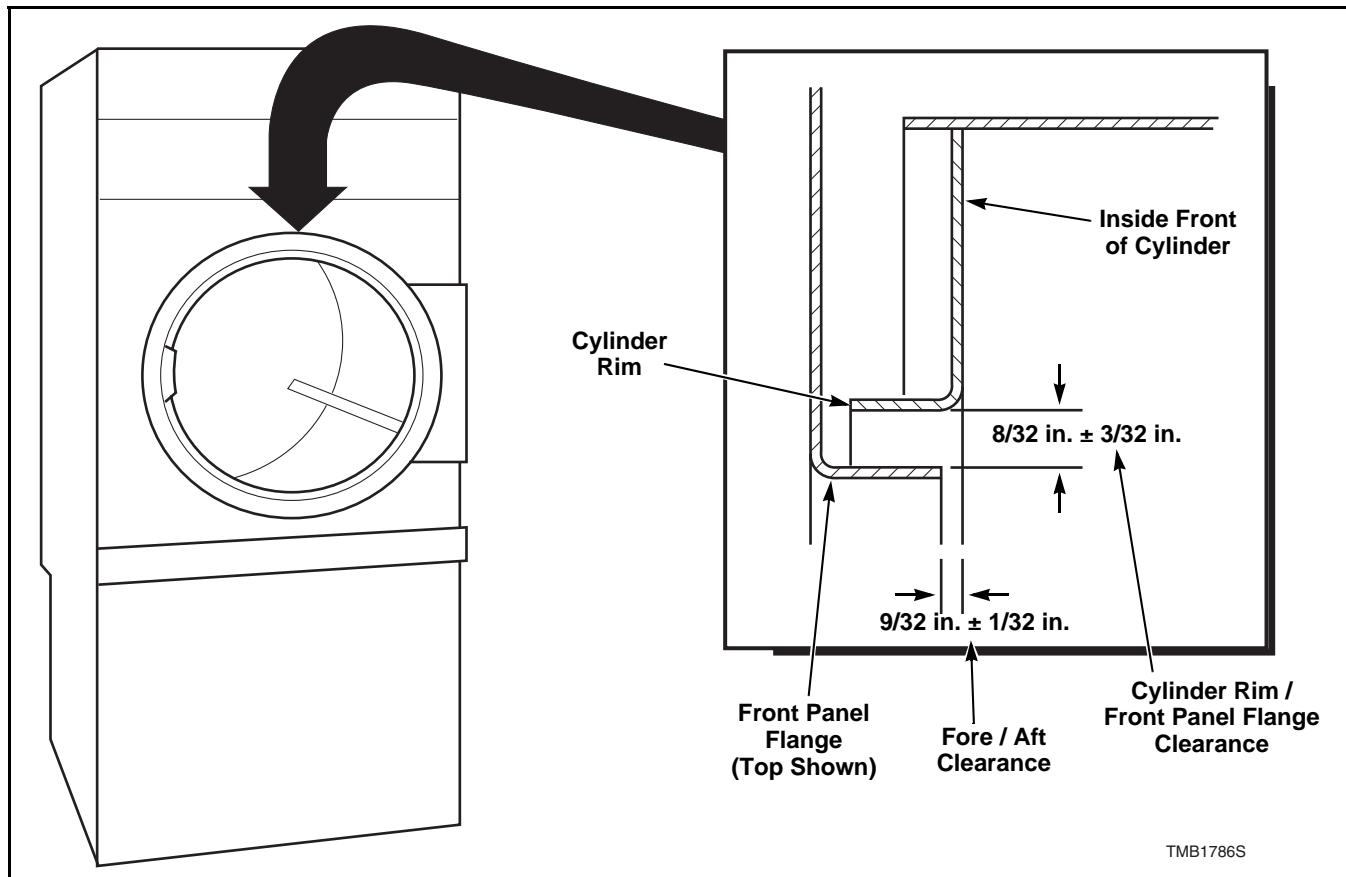


Figure 29

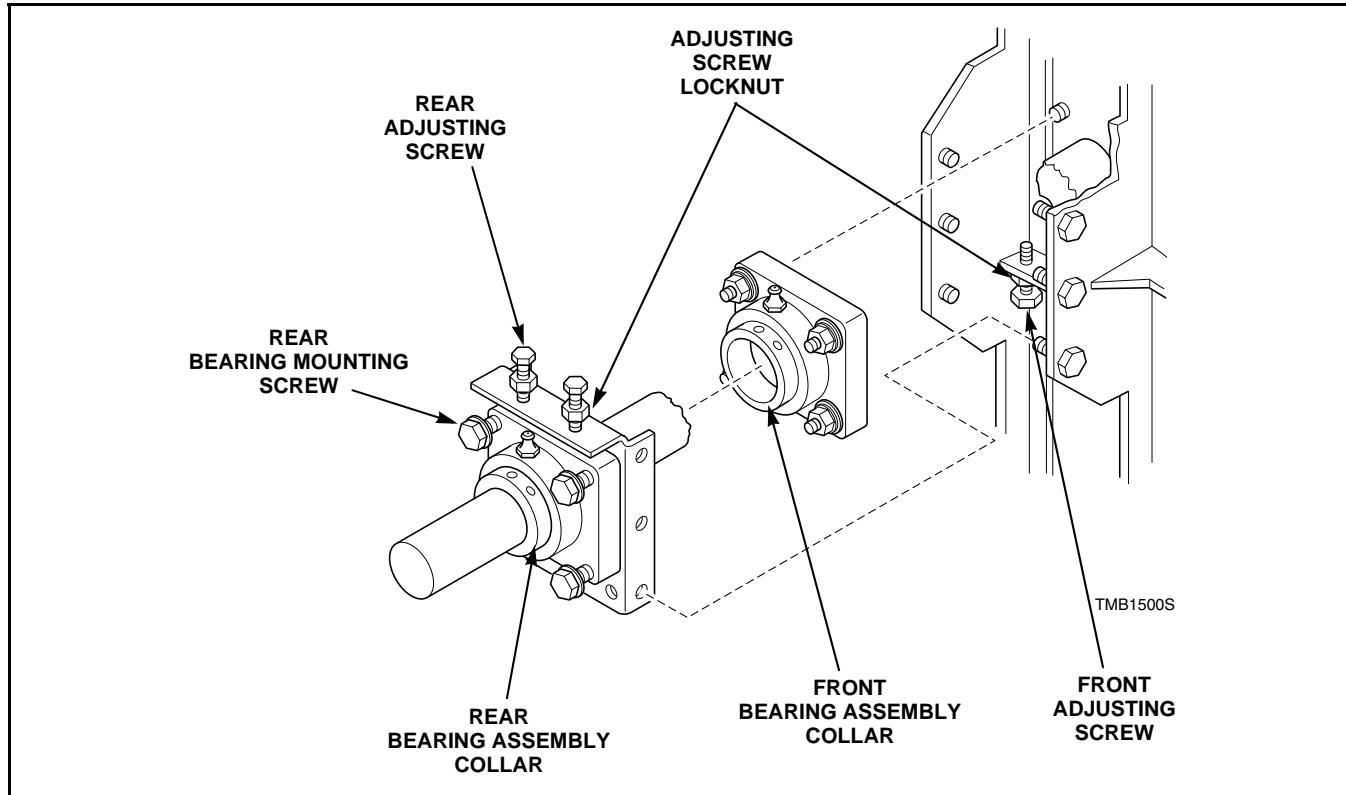


Figure 30

Section 7

Wiring Schematics



WARNING

Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

W030

WIRING DIAGRAMS AND SCHEMATICS
FOUND ON THE FOLLOWING PAGES
ARE FOR MODELS COVERED IN THIS MANUAL.

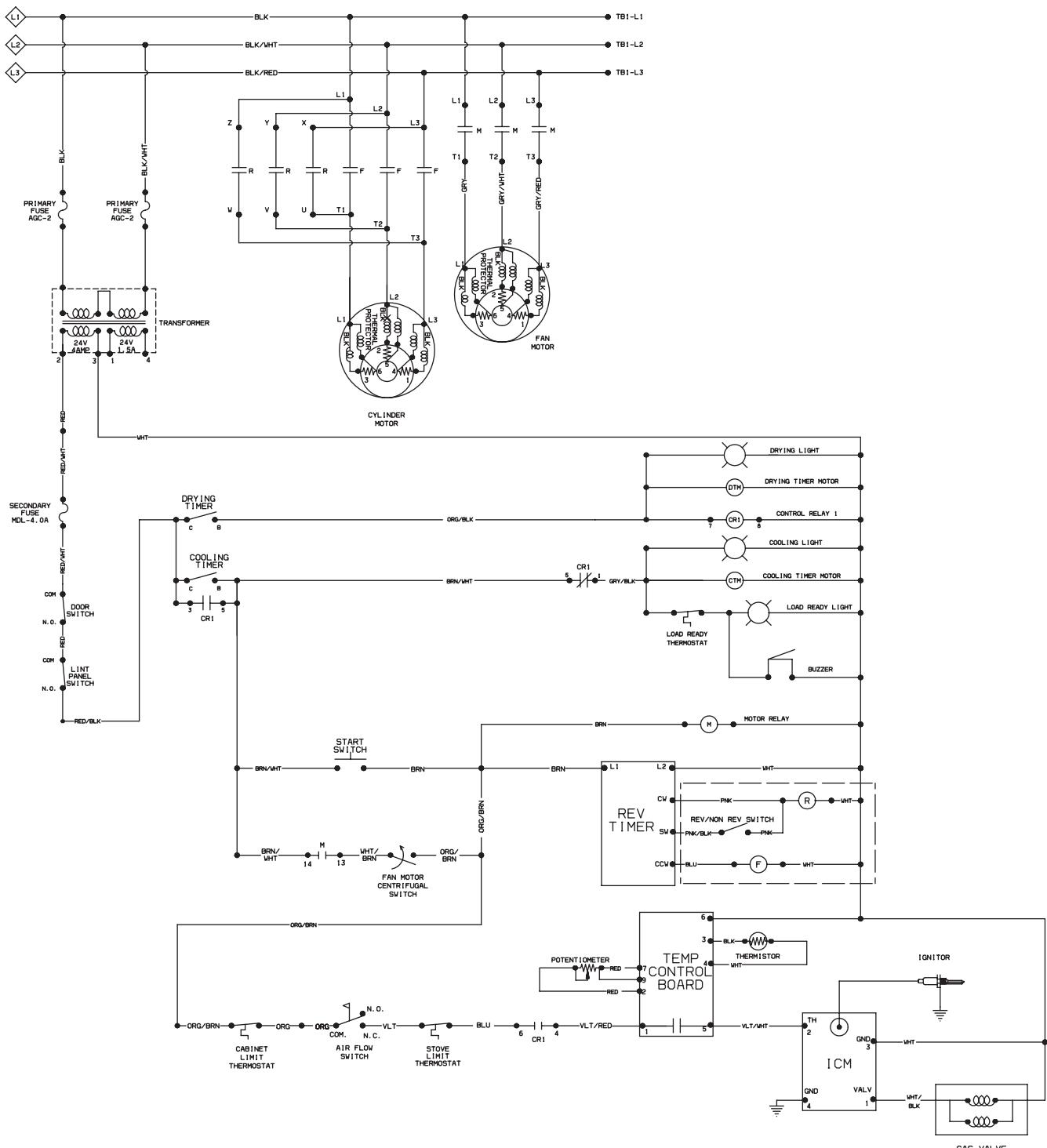
Section 7 Wiring Schematics



WARNING

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W030



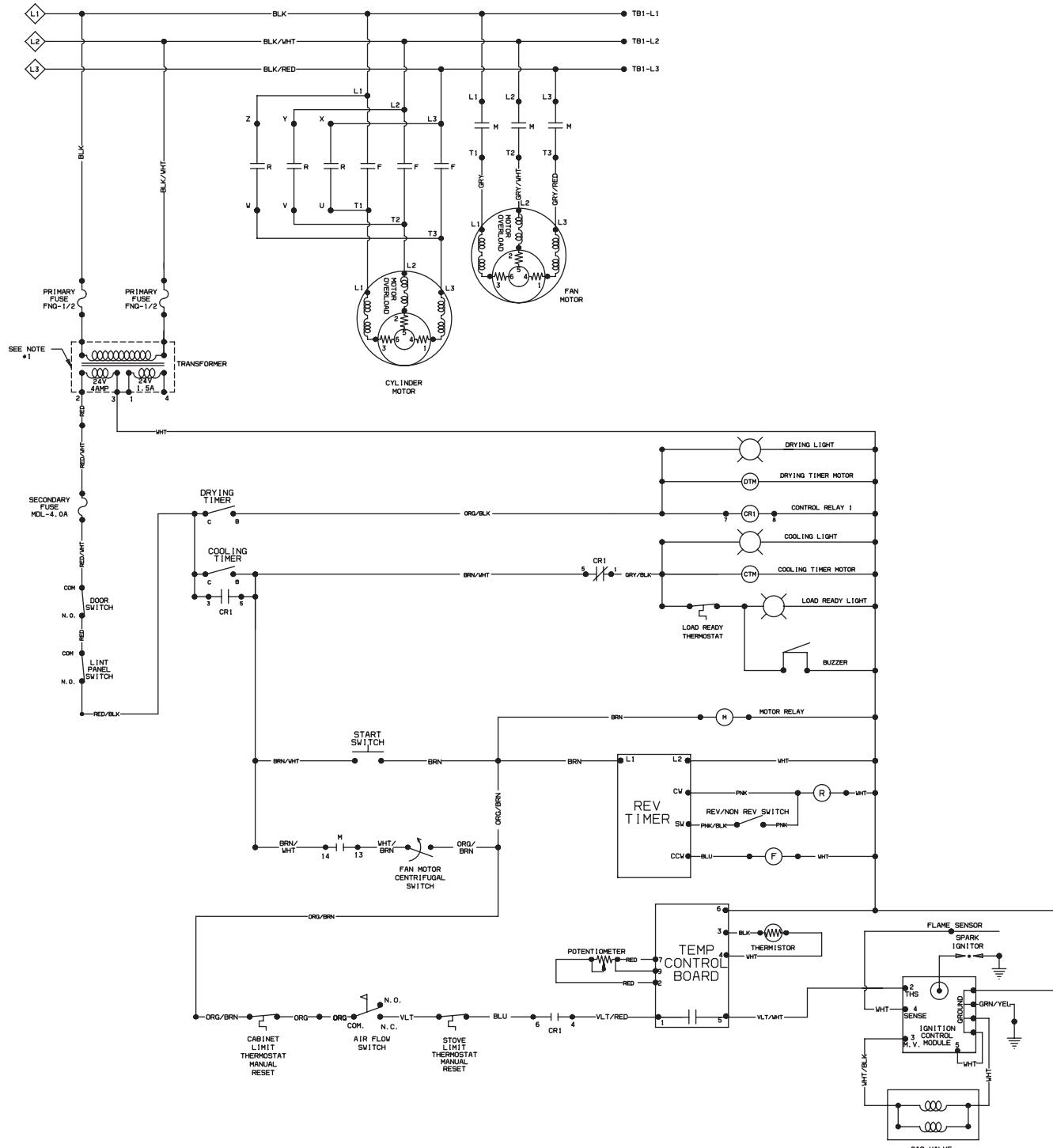
**MANUAL TIMER MODELS
208-230 VAC, 60 HERTZ GAS**



WARNING

Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

W030



MANUAL TIMER MODELS
380-415 VAC, 50 HERTZ, 3 PHASE GAS

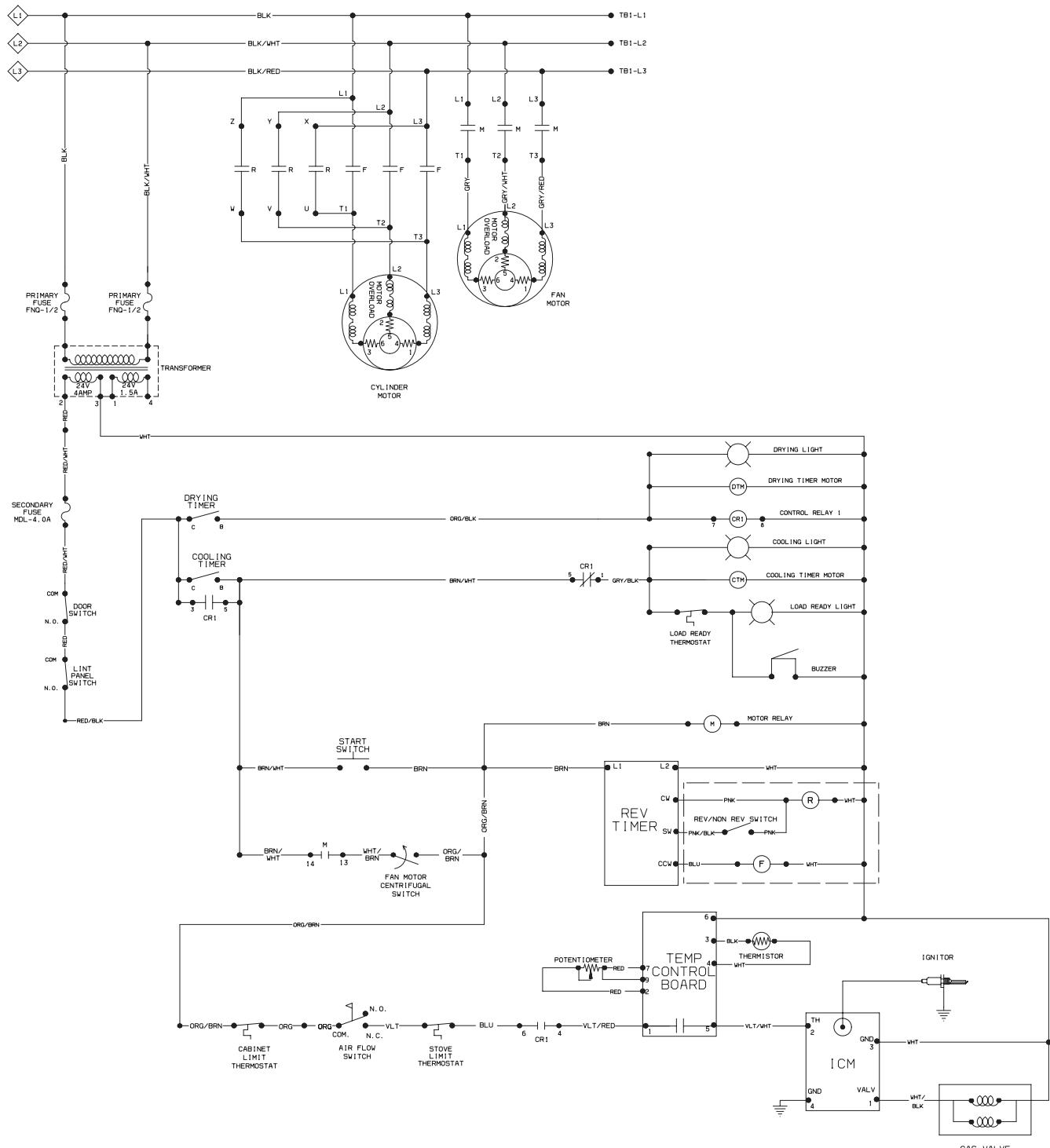
Section 7 Wiring Schematics



WARNING

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W030



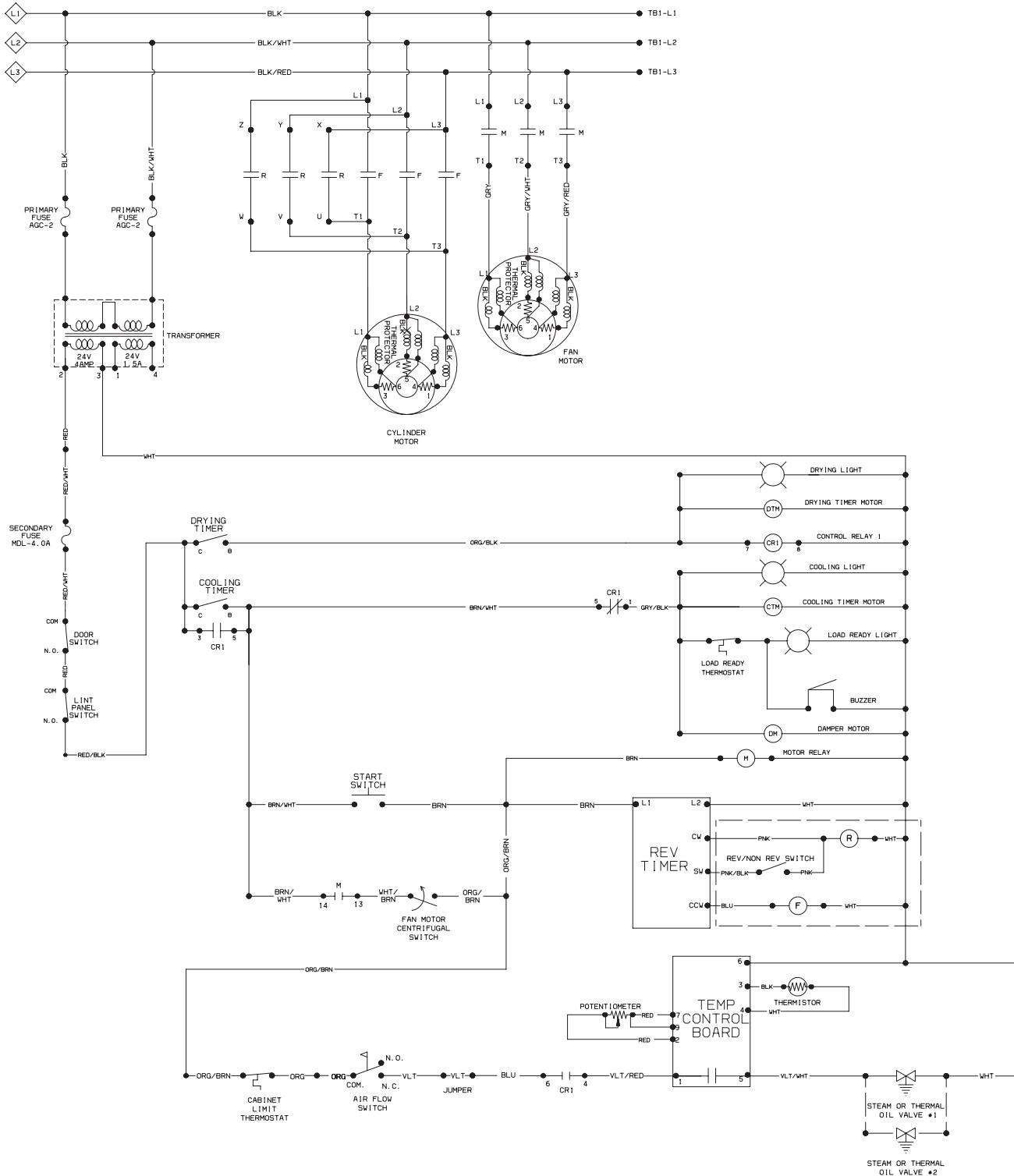
**MANUAL TIMER MODELS
460 VAC, 60 HERTZ, 3 PHASE GAS**



WARNING

Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

W030



MANUAL TIMER MODELS
208-240 VAC, 60 HERTZ, 3 PHASE STEAM

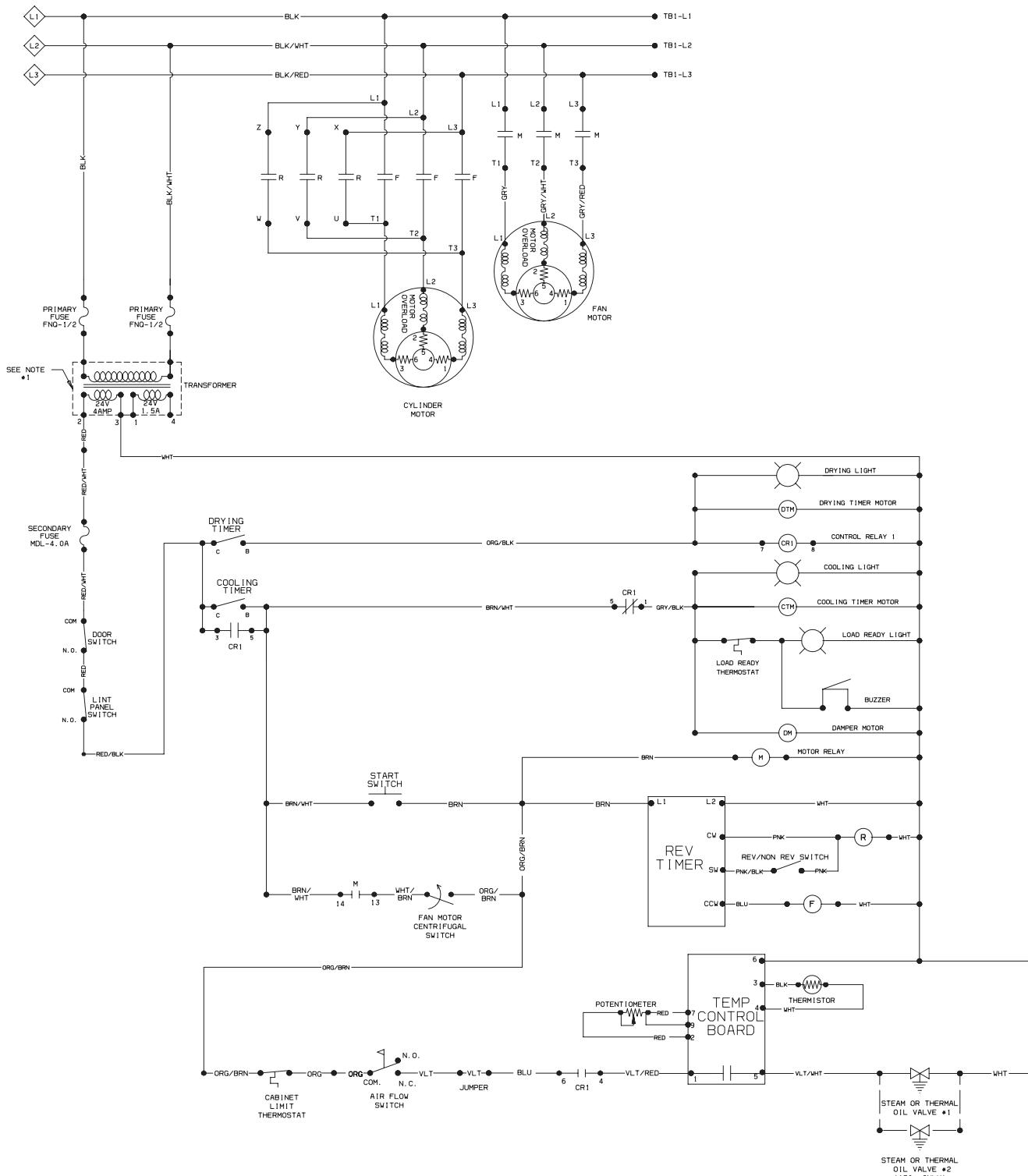
Section 7 Wiring Schematics



WARNING

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W030



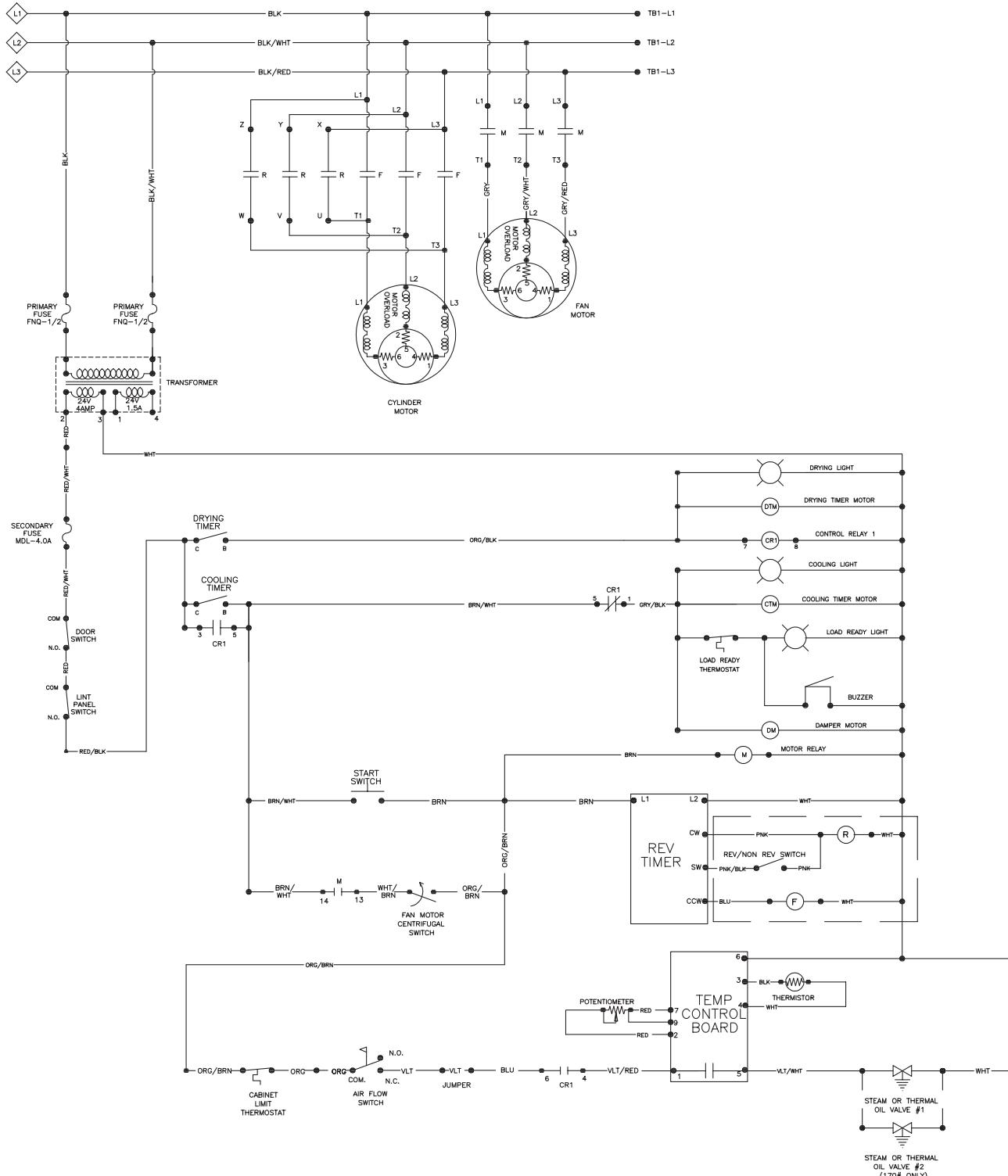
MANUAL TIMER MODELS
380-415 VAC, 50 HERTZ, 3 PHASE STEAM



WARNING

Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

W030



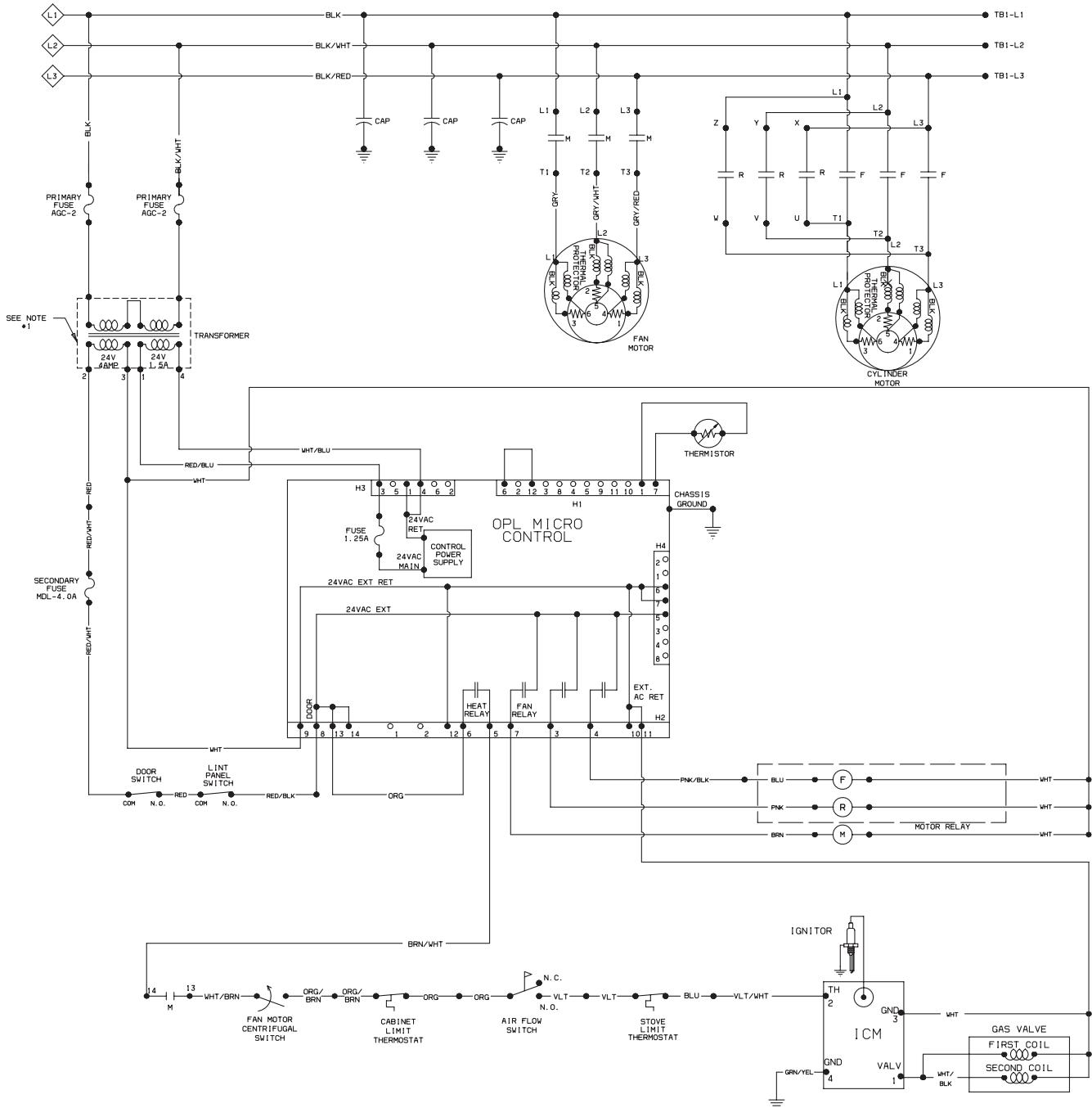
**MANUAL TIMER MODELS
460 VAC, 60 HERTZ, 3 PHASE STEAM**



WARNING

Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

W030

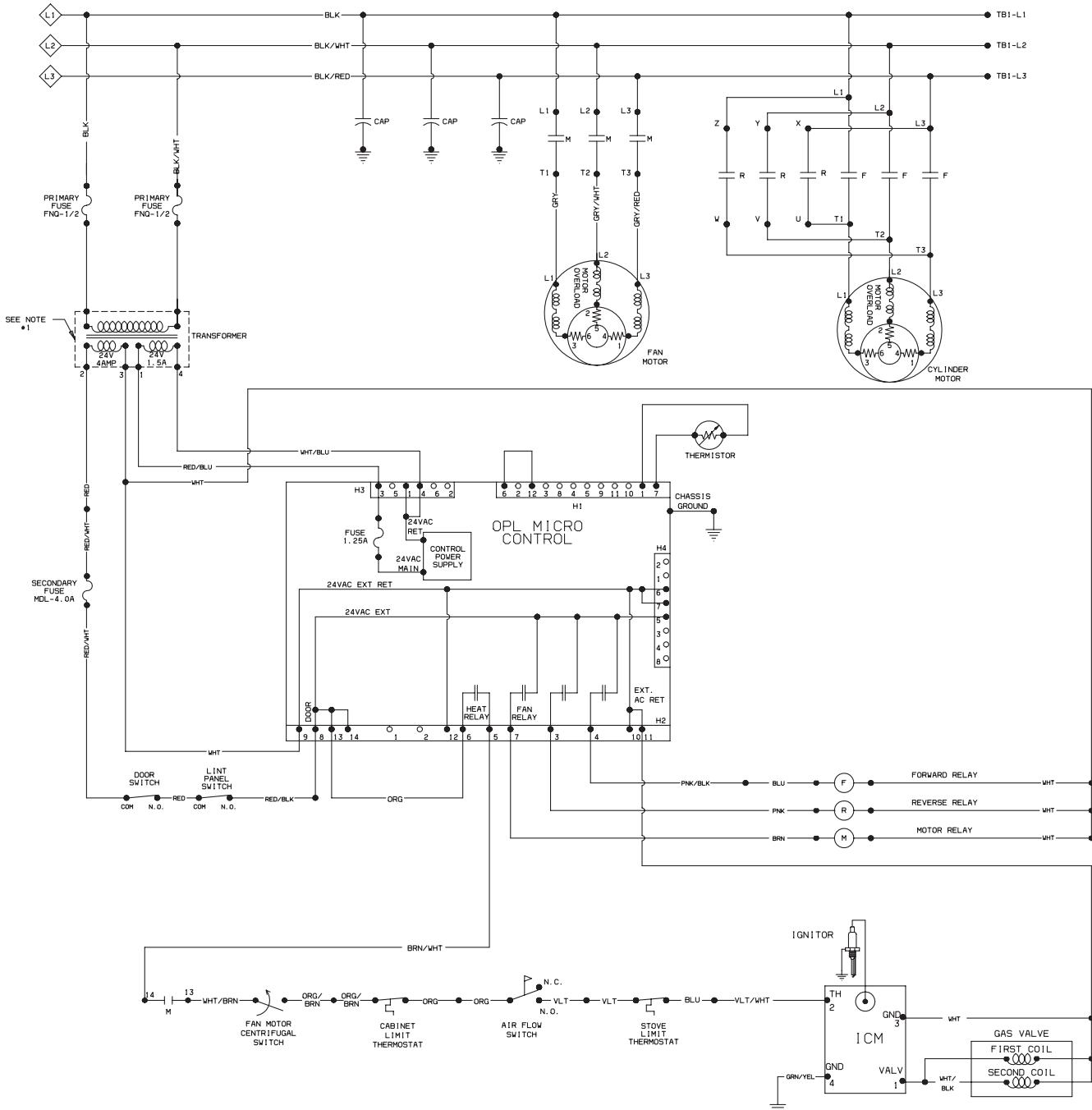


**AT, HT, PT, ST, UT, WT AND XT MICRO CONTROL RM MODELS
208-230 VAC, 60 HERTZ GAS**

**WARNING**

Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

W030



**AT, HT, PT, ST, UT, WT AND XT MICRO CONTROL RM MODELS
380-415 VAC, 50 HERTZ, 3 PHASE GAS**

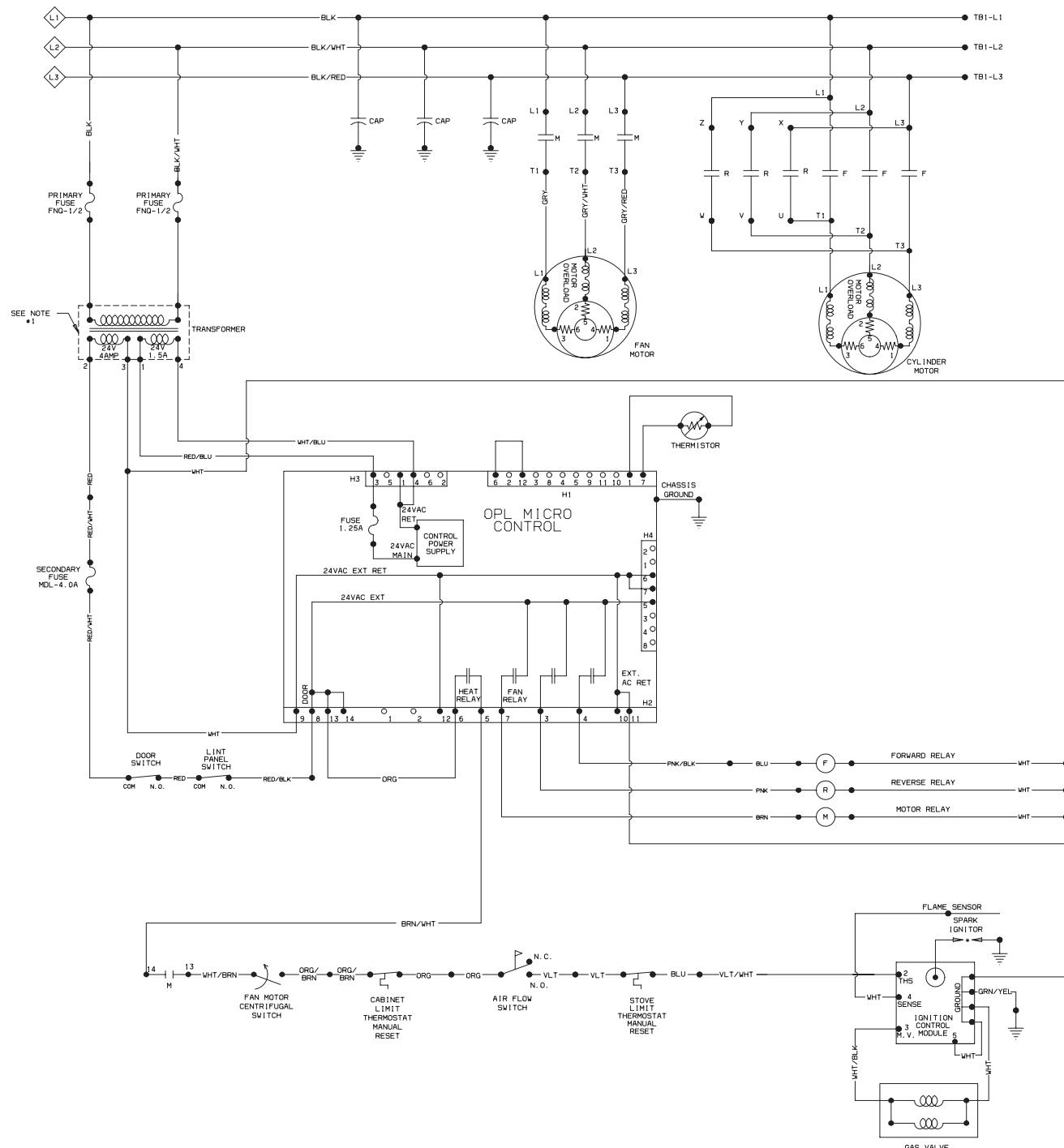
Section 7 Wiring Schematics



WARNING

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W030

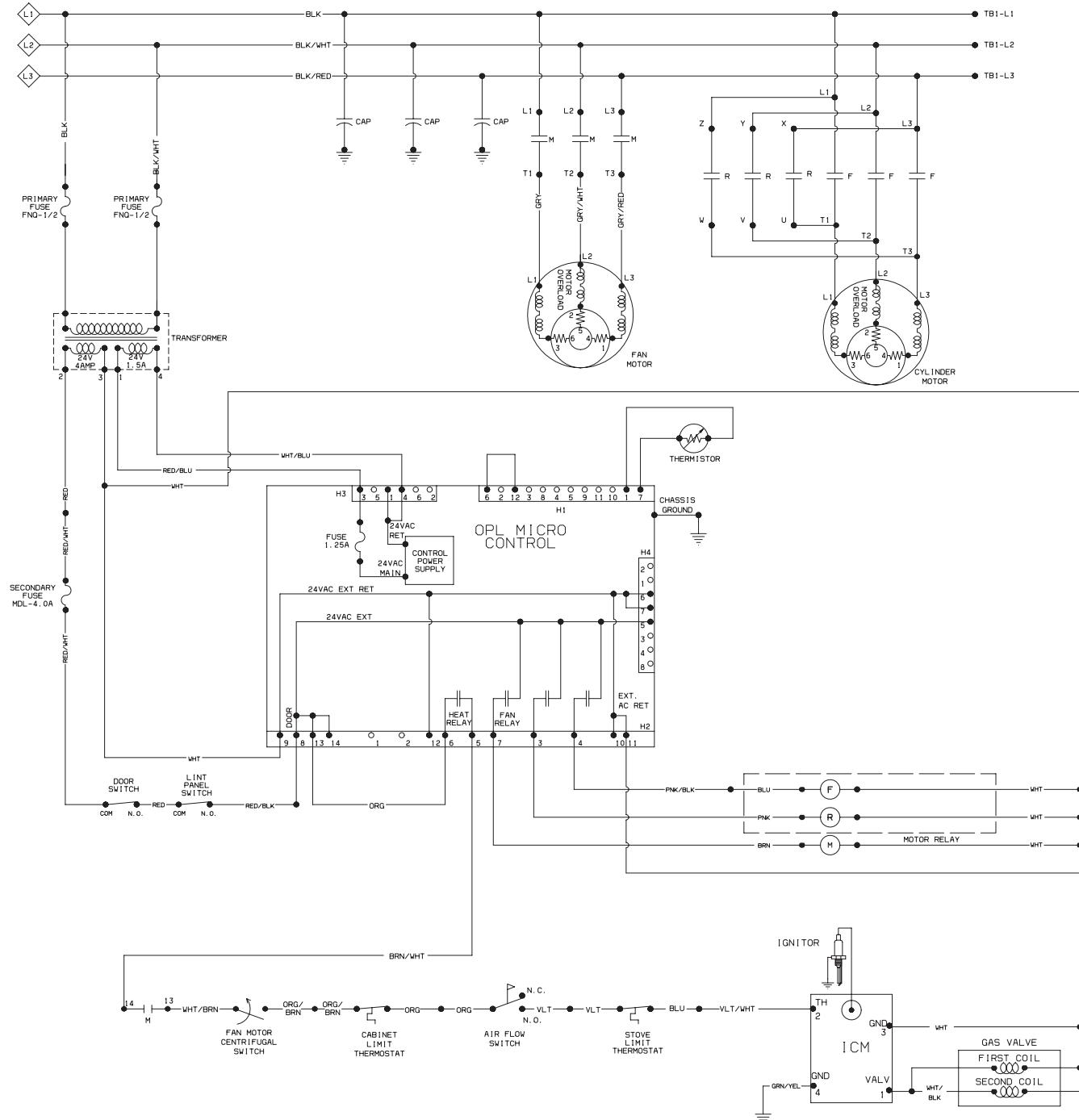


HA, PA, SA AND UA MICRO CONTROL RM MODELS
380-415 VAC, 50 HERTZ, 3 PHASE GAS

**WARNING**

Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

W030



**AT, HT, PT, ST, UT, WT AND XT MICRO CONTROL RM MODELS
460-480 VAC, 60 HERTZ, 3 PHASE GAS**

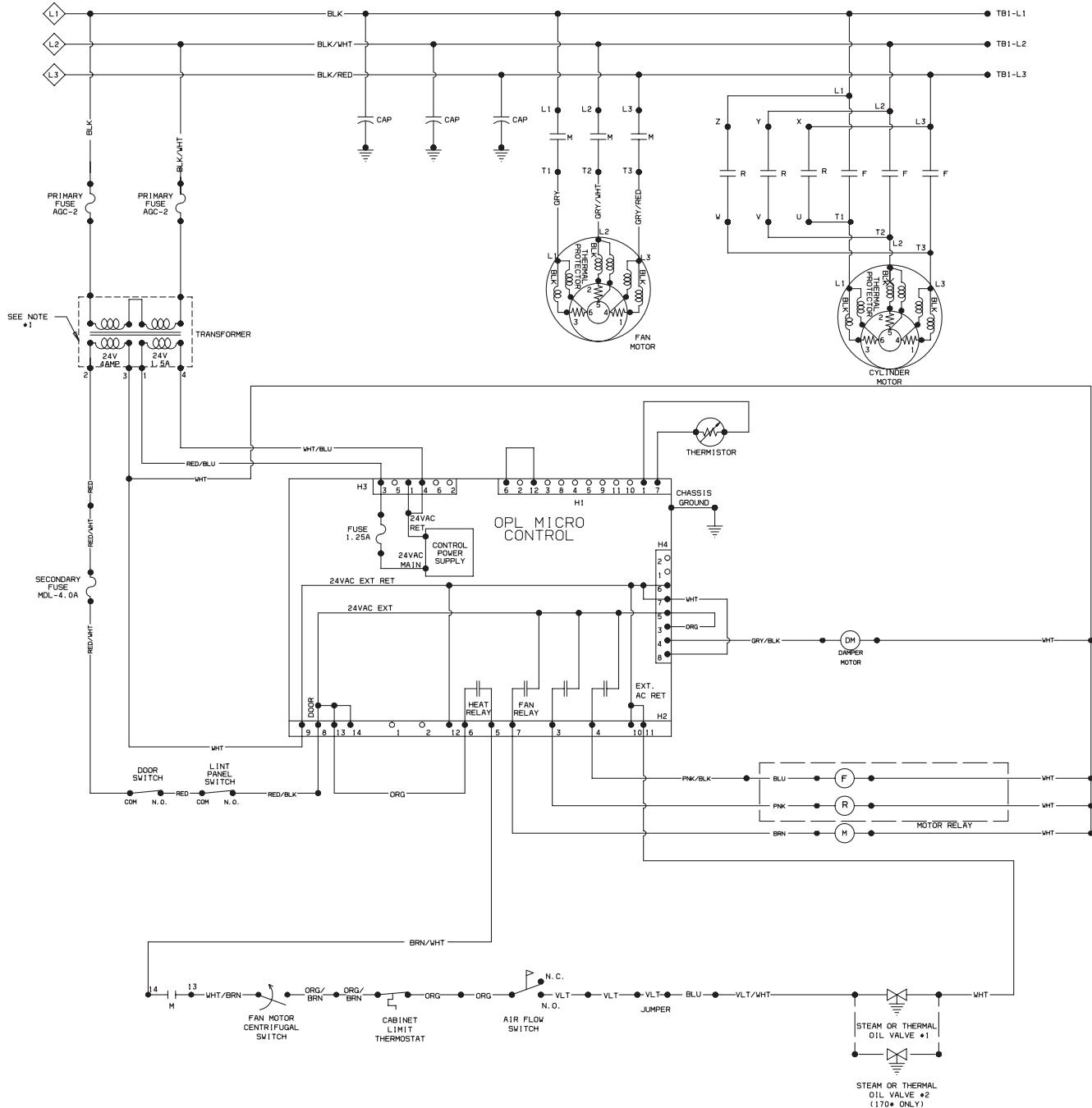
Section 7 Wiring Schematics



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W030

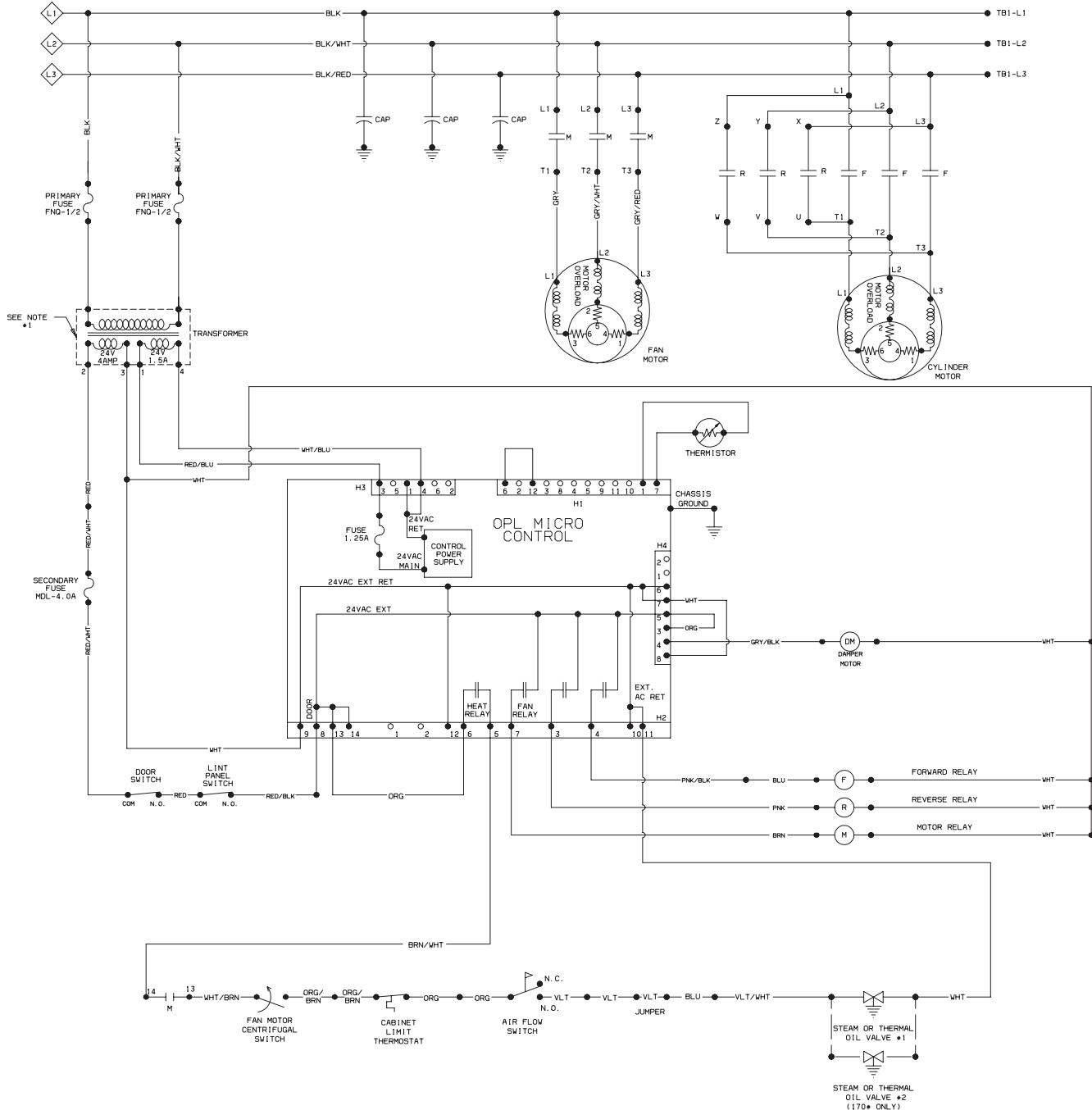




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W030



**AT, HT, PT, ST, UT, WT AND XT MICRO CONTROL RM MODELS
380-415 VAC, 50 HERTZ, 3 PHASE STEAM**

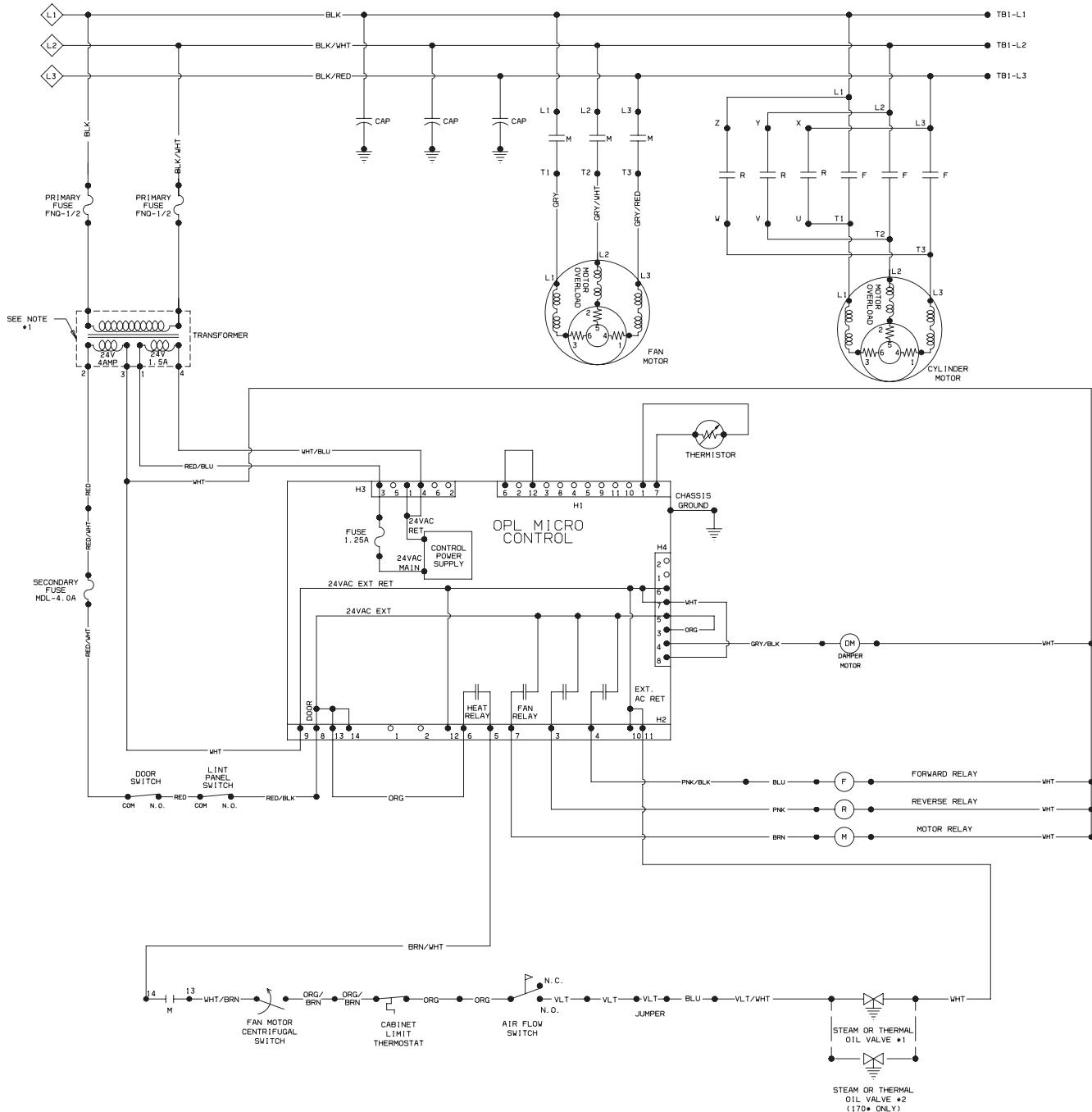
Section 7 Wiring Schematics



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W030

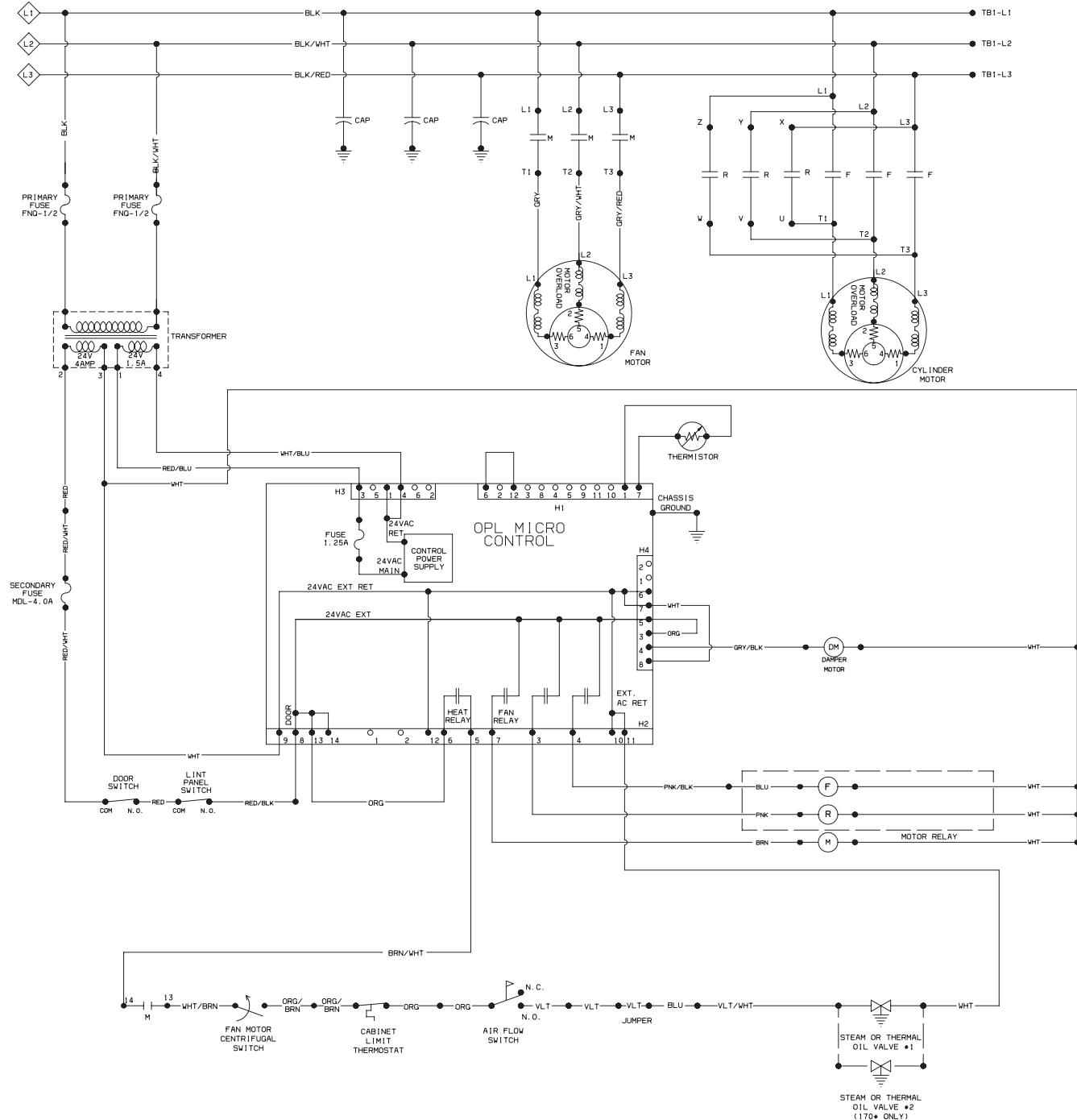


**HU, PU, SU, UU AND XU MICRO CONTROL RM MODELS
380-415 VAC, 50 HERTZ, 3 PHASE STEAM**

**WARNING**

Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

W030



AT, HT, PT, ST, UT, WT AND XT MICRO CONTROL RM MODELS
460-480 VAC, 60 HERTZ, 3 PHASE STEAM

Notes

